LITHOTOMIA VESICÆ:

That is,

An accurate descriptiō of the Stone in the Bladder: Shewing the Causes and Pathognomicall Signes thereof, and chiefely of the Method whereby it is to be artificially taken out both of Men and Women, by Section.

Wherein severall wayes of Operation are described, and the Chirurgicall Instruments lively delineated.

Written first in *High Dutch* by *Gulielmus Fabritius Hildanus*, Physician in ordinarie to the most Illustrious Prince, *George Frederick*, Marquesse of *Baden*, and *Halberg*, *&c.* and the famous State of *Berne*.

Afterward augmented by the Author, and first translated into *Latin* by his Scholler and Communer *Henricus Schobingerus Sangalhensis*; And now done into *English* by *N. C.* for the generall good of this *Nation*, *and particular use of the Societie of* CHIRURGIANS.

With better Instruments than heretofore.

LONDON,
Printed by JOHN NORTON, and are to be sold by *William Harris* in *Coleman*-street, at the signe of the White Hinde. 1640.

MVSEVM
BRITAN
NICVM

TO THE

WORSHIPFVLL COMPANIE OF THE BARBER-CHIRURGIANS,

JOHN NORTON wisheth encrease in skill, fortunateneſſe in practice, and all other happineſſe.

4 G G 1

HOw dangerous a practice the Curation of the Stone by Section is, it is evidently evinced, not onely by Reaſon, if we conſider the ſtructure and temperature of the part affected, but

by Experience alſo: ſeeing ſo few attempt it, and ſo many doe die, who ſubmit themſelves to this manner of Curation, although the Operator performe his part: Wherefore, too great Caution cannot be had, in going about this Operation. To inſtruct therefore the Operators, and the more to enable them, ſome have invented fit Inſtruments, and ſome have left Treatiſes to Poſteritie, to enable ſuch as give themſelves to deliver ſuch as are troubled with the lamentable Diſeaſe of the Stone; it being ſo grievous to the diſeaſed perſons, as it enforced them to admit this manner of Curing, with the danger of loſing their lives; which loſſe is irrevocable. A Treatiſe of this ſubject having beene penned in the Latine *Tongue by* Gulielmus Fabritius

Dedicatorie.

Fabritius Hildanus, *one well knowne to all* Europe, *as well for his experience in Physick and Chirurgerie, as his Learning, it came to my hands. No sooner did this fall out, but that immediately I went to those who here with us are accounted most judicious, and best acquainted with this practice, and entreated them to peruse the Booke, and freely and impartially to deliver their opinion of it, and to tell me, whether it was like to benefit the Operators of this Realme, if it were translated into our Language. Each one of these, being dispersed, by reason of their Habitations, with one accord affirmed, that the like discourse of this subject was never penned, and could not but much profit such as in this our Countrey should attempt*

this Operation. Being perswaded of the veritie of this their Censure, I committed this Businesse to the care of one, who was sufficiently able to expresse the Authors meaning in good tearmes, as by collation of the Originall with the Version, will appeare to any one who is not a meere stranger to this Operation; and was at the Charges my selfe, both of the paines of the Translating, and Printing. Advising with my selfe, to whom it was best to Dedicate this Treatise, I resolved to make choyse of your Worshipfull Companie; it by right belonging to you, the performers of this Operation being Members of your Companie. And, although to some it may seeme onely advantagious to such as practice Lithotomie,

yet

yet (if the matter be well considered) the Readers shall not be deprived of their Fruit: For, if they be Chirurgians who meddle not with this Operation, yet their knowledge shall be encreased, and their judgement better enformed: If they be Schollars, or Gentlemen, they shall reape oblectation: If they are like to prove Patients, their Doubts shall be resolved; the Operation it selfe shall be represented to the eyes of the Mind: whereby they will conceive a greater alacritie, and be enabled with a fuller resolution, to endure that which is to be done, according to Art. And, seeing the respect I beare towards the Worshipfull Companie, hath moved me to Dedicate this Treatise to you, you

will (I hope) accept the Worke it selfe, Dedicated with a chearefull countenance, and think well of the Dedicator, seeing he unfainedly observeth you.

I. N.

PRÆFA-

PRÆFATIUNCULA
ad Lectorem.

Hunc de Lithotomia Vesicæ Tractatum quum paulò diligentiùs perlegissem, atque accuratiùs examinassem, dignum eum existimavi, qui in lucem prodiret, ac publici juris fieret. Illius signa dilucidiùs depingit, operationis modum clariùs ostendit, curationis rationem fidèliùs proponit, atque instrumentorum figuras fœliciùs describit, quàm quivis eorum qui præivère, atque de hoc subjecto hactenus scripsere. Ex illius lectione non mediocri lætitia perfusus fum eò quòd tam clarè ob oculos hanc Chirurgiam

rurgiam ponat, ex qua in adoleſcentia lucrum amplum percepi. Quantâ curâ ac ſollicitudine ea tentanda ſit, iis ignotum eſſe non poteſt, qui *Hippocratis* jusjurandum perlegêre. Plurimorum qui ſectionem hanc admiſere, flebilis mors, imperitorum artificum inſcitiâ illata, hanc operationem infamem ac metuendam apud vulgus reddidit. Quas ergo grates dignas illi perſolvemus, cujus operâ reddita eſt ſecurior? Quamobrem omnes hortor, quibus animus eſt ſemet in hac Chirurgia exercere, ut Tractatum iſtum ſibi comparent, ac nocturnâ diurnâque manu verſent. Neque abs re erit ſi Medici illum percurrant, quibus jucundum eſt hiſce operationibus intereſſe. Ita namque & de Artificis peritia melius udicare, & de eventu certius aliquid pronunciare poterunt. Non eſt quod Autor aut maligni livoris dentem curet, aut ſeveriorum Criticorum ceras miniaculas pertimeſcat, quum Candidis at gratis Lectoribus

Ad Lectorem.

bus pergratum opuſculum futurum
t.

Hæc ſcribebat 7. Calend. Martias,
nni æræ Chriſtianæ 1640.

ALEXANDER REIDUS, *Medicinæ Doctor, atque è numero Sociorum inclyti Collegii medici, quod eſt Londini.*

The

The Preface to the Reader.

When I had with diligent care read this Treatiſe of Lithotomie, *I thought it worthy to be publiſhed. It ſets forth the ſignes thereof more manifeſtly, it ſhewes the manner of its working more clearely, it propounds the reaſon of the Cure more faithfully, and deſcribes the faſhions of the Inſtruments with greater dexteritie than any one who hath heretofore wrote of this ſubject. I tooke no ſmall pleaſure in the reading thereof, becauſe it ſo plainely ſet before mine eyes that part of Surgerie, whereby in my youth I received ſo great gaine. With what care and warineſſe this is to be undertaken, they cannot be ignorant, who have read the Oath of* Hippocrates. *The lamentable deaths of many which have beene cut, proceeding from the ignorance of unskilfull Chirurgians, hath made this Art infamous and*

nd dreadfull amongſt the common people. herefore, how great thanks owe we to him, y whoſe paines it is made more ſecure? herefore I exhort all that have a deſire to xerciſe themſelves in this part of Surgerie, hat they get this Booke, and make them- lves exactly perfect in the ſame. Neither it unneceſſarie that Phyſicians ſhould ead over the ſame, who take delight to be reſent at theſe Workes; for ſo they may both etter judge of the skill of the Workman, nd declare their minds more certainely, con- rning the Event. The Author need not are either the Tooth of malicious Envie, or e Cenſure of ſevere Criticks, ſeeing it will a Work acceptable to ingenuous and grate- ll Readers.

Written this ſeventh day of the Calends of March, in the yeere of our Lord God, 640.

By ALEXANDER REID, Doctor of Phyſick, and of the Societie of the Colledge of Phyſicians at *London.*

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When I had with diligent care read this Treatise of Lithotomie, *I thought it worthy to be published. It sets forth the signes thereof more manifestly, it shewes the manner of its working more clearely, it propounds the reason of the Cure more faithfully, and describes the fashions of the Instruments with greater dexteritie than any one who hath heretofore wrote of this subject. I tooke no small pleasure in the reading thereof, because it so plainely set before mine eyes that part of Surgerie, whereby in my youth I received so great gaine. With what care and warinesse this is to be undertaken, they cannot be ignorant, who have read the Oath of* Hippocrates. *The lamentable deaths of many which have beene cut, proceeding from the ignorance of unskilfull Chirurgians, hath made this Art infamous and*

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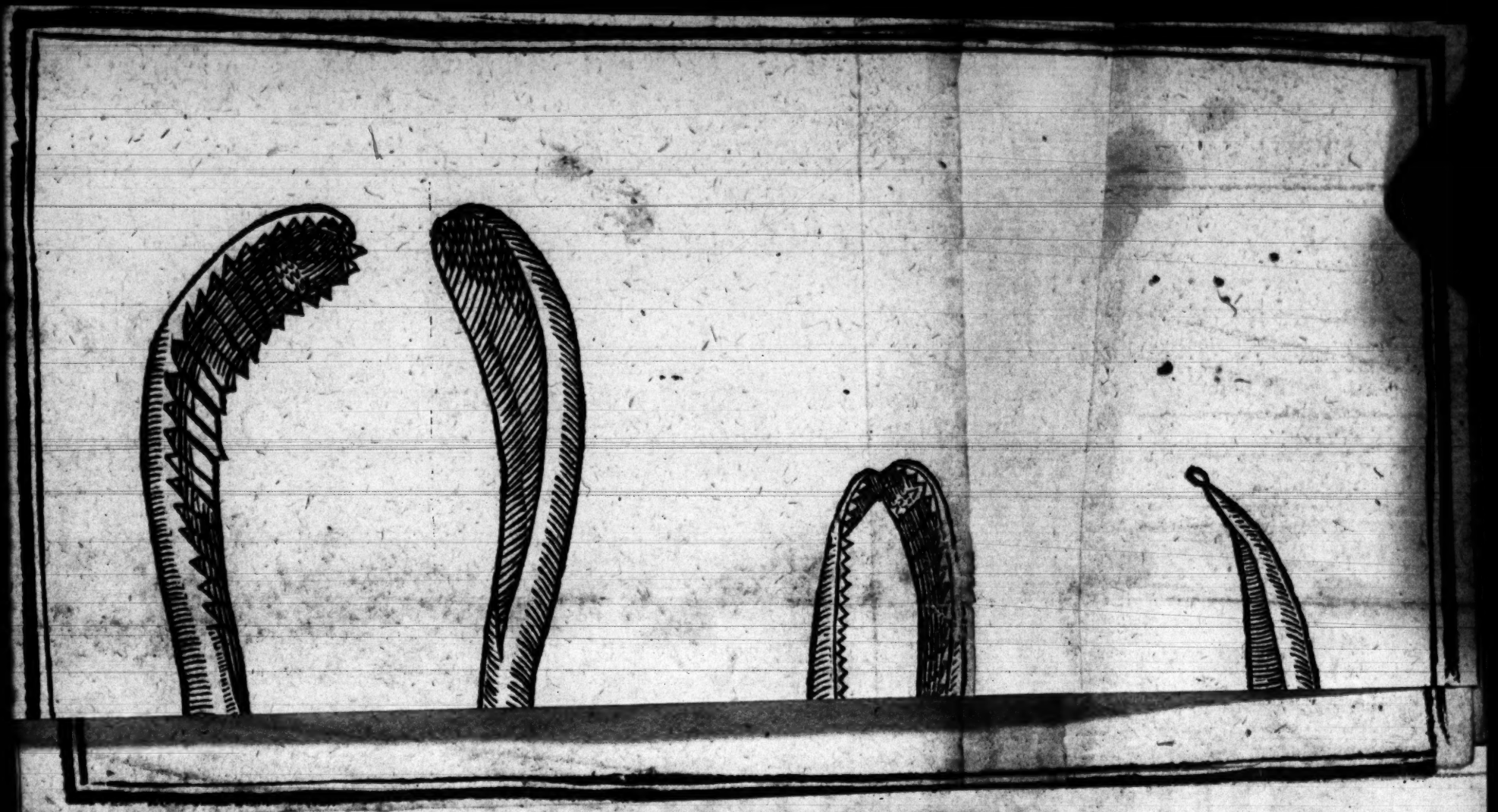
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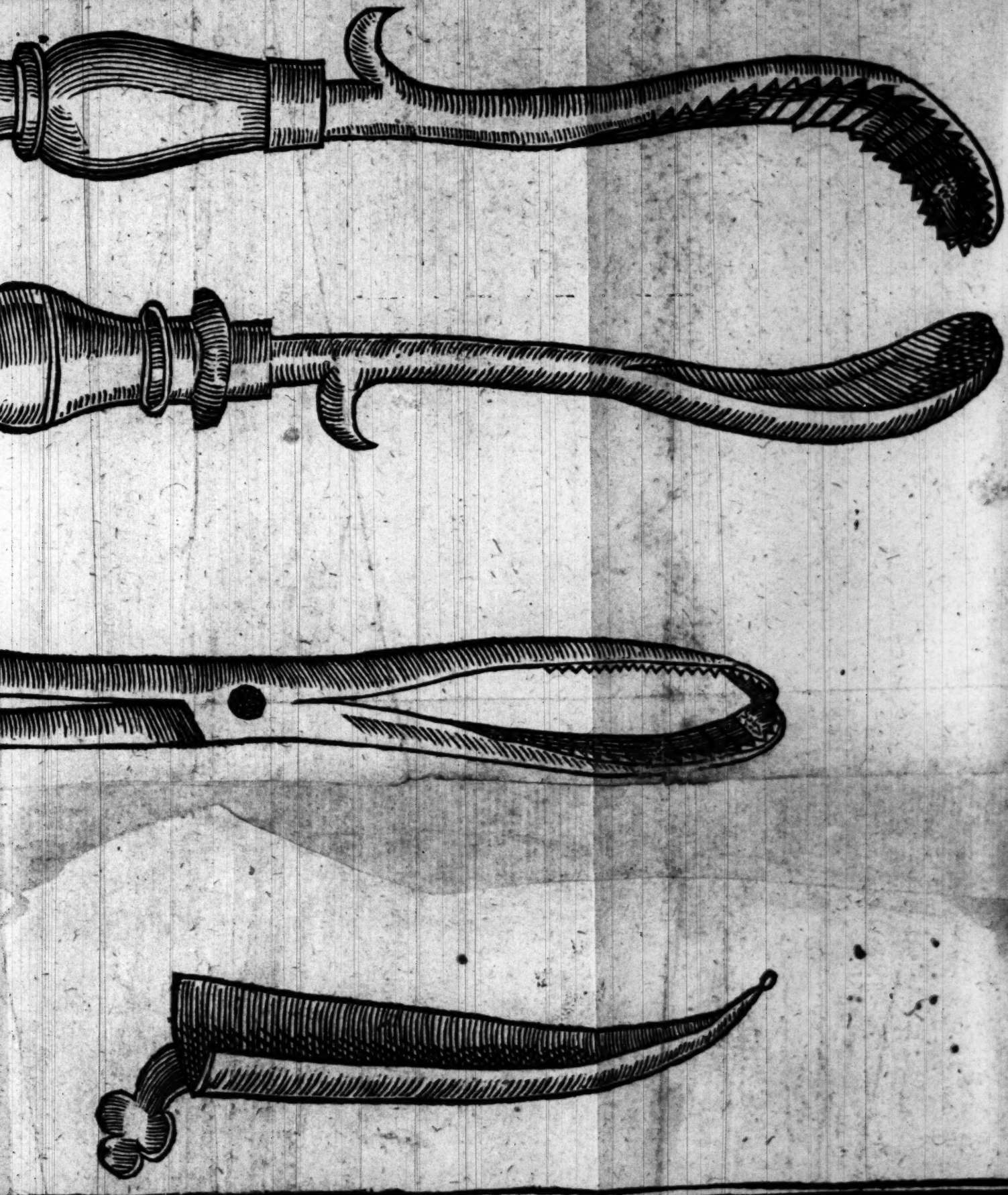
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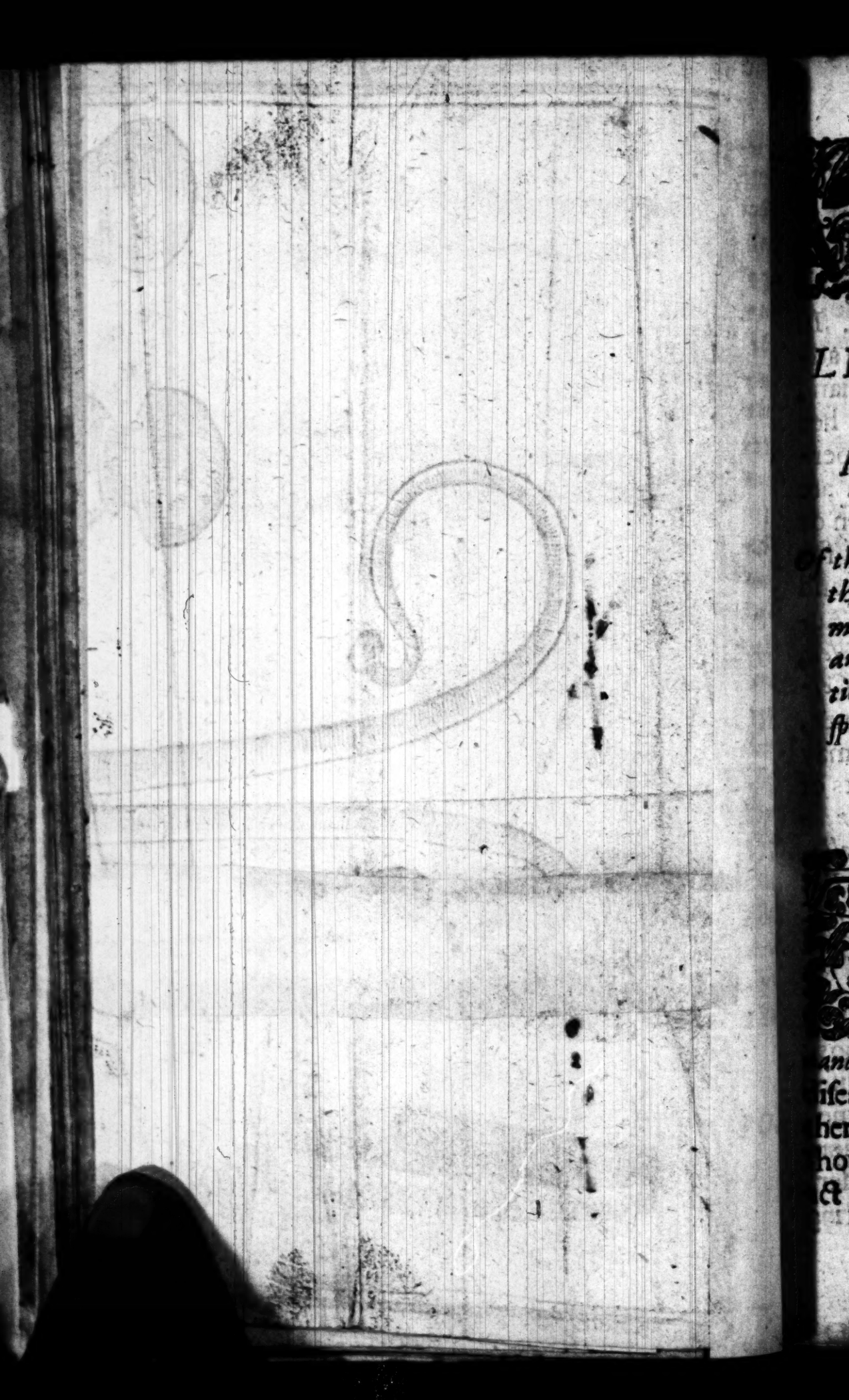


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LITHO





LITHOTOMIA VESICÆ.

THAT IS AN ACCURATE DESCRIPTION

of the Stone of the Bladder; the causes and Pathognomicall signes thereof, but chiefly of the method whereby it is to be taken both from men and women; wherein severall kinds of operations are set downe, and some instruments of speciall use pourtraited.

CHAP I.

THE Divine Hippocrates Father of Physitians, hath not without cause in his booke *de Arte* left us this Aphorisme, *Medicus, si sufficerit ad cognoscendum, sufficiet quoque ad sanandum.* The Physitian which can discover the disease, may be able also to cure it; advising thereby all prudent sonnes of Art, that they should use all diligence and care, to get an exact, and accurate knowledge of the disease,

before they intend or thinke to prescribe an or-
der for the cure. And surely whosoever shal
proceede otherwise, whether in externall o
internall sicknesses, and passions, will hardl
or never be able to attaine his desired end, an
restore the Patient to his former health. I
these words therefore, he doth specially ad-
monish every faithfull and wise Chirurgian,
that upon all cases propounded to him, he
should endeavour and study to obtaine a per-
fect knowledge of the particulars which ar
to be done; which being not to bee gotten o
learned by bare experience, it is necessary fo
attainment thereof, that he should take an
read over the best and most approved Au-
thors. Among the Antients, *Hippocrates, Gale
Avicene, Paulus ab Æginetâ, Cornelius Ce
sus*, and *Albucasis* are the chiefe fountaines
whence each Physitian, and Chirurgian ma
draw the Theory, and fundamentall points o
Art. After them succeeded *Lanfrancus, Gui
de Cauliaco, Vigo, Tagaultius, Vesalius, Falle
pius Ioh. Andreas à Cruce, Hieronymus Fa
britius ab Aquapendente*, and *Ambrosius Pa
reus*, some whereof have written in the Ger
man tongue.

This Adviso I doe not causelesly set down
in the entrance of this tractate. For I know
there are some giddy-headed, and unadvise
Chirurgians, which upon each slight signe
and uncertaine suspition of the Stone, common-
ly apply the incision-knife to the Bladder

boaring

boaring and ſearching there, yet in the end find no Stone at all. Such an Emperick came to *Collen* in my time, who thought highly of himſelfe, but when hee came to take away a ſtone from a ſicke perſon, and found none in the bladder, he nimbly, and privily tooke one out of his own budget, and put it into his pincers, feigning that hee drew it out of the ſick mans bladder: Some of the by-ſtanders apprehended the impoſture, and diſcovered his knavery to the Magiſtrate, who after examination cauſed him firſt to bee puniſhed according to his deſert, and then baniſhed him. But whence ariſeth this miſchiefe? The ſource is this; Either becauſe ſome villainous, haire-braind men, whoſe aime is onely to fill their pockets, are permitted to practiſe *Lithotomie*; or the want of Art and experience in others, or not perfect knowledge of the diſeaſe, or becauſe they ſuffer themſelves to be deceived with one ſigne, or more, ſuch as are common to the ſtone with other paſſions of the bladder.

The fraud of an Impoſtor diſcovered.

That a Chirurgion may come to an exact knowledge of the diſeaſe, wee ſhall firſt declare what the Stone is, next what be the cauſes thereof, and laſtly what be the Pathognomicall ſignes thereof; Of which three ſubiects wee ſhall treate in theſe firſt, ſecond, and third Chapters.

To proſecute my purpoſe, I ſay the Stone is a preternaturall, groſſe, ſlymie, coagulated humor, brought into a ſtone of a thicke matter,

The definition of the Stone.

by a preternaturall heate and hidden quality in the Bladder. For when the ſtone by reaſon of its roughnes or acrimony, doth exulcerate, teare, pricke and weaken, the moſt ſenſible ſubſtance of the bladder, or is incloſed in the neck thereof and ſtops it, then the urine by little and little is collected in the Bladder, and ſo ſtretcheth and dilateth it, that oftentimes the Capilare veines thereof are broken, and what paine the ſicke man ſuffers thereby, it is ſcarce credible, eſpecially by thoſe who have been but little uſed in this diſeaſe. The companions attending this torment, are want of reſt, watchings, heat, inflammation of the bowels, raving, weakenes of the ſtomach and whole body. Man therefore by reaſon of the continuance of paine being barred his naturall reſt, the naturall functions are interrupted: the ſtomack cannot concoct and digeſt the meate, and ſo a raw Chylus is thence tranſmitted to the liver where the ſecond Concoction ſhould be made; and becauſe the errour of the firſt Concoction is not amended in the ſecond, therefore good blood cannot be produced from that raw, groſſe and halfe concocted Chyle, and diſperſed from the liver by the veines to the other parts of the body. Hence the whole body is filled with evill humours, and thence ariſe many and ſeverall diſeaſes as well externall as internall, as the Iaundies. Colliquation, Convulſion, Dropſie, and *morbus Articularis*, malignant Ulcers, Fiſtulaes, and at laſt, after

cont

ontinuall languishings, death it selfe ensueth.

Fernelius affirmeth and writeth that all ones in the bladder spring from the kidnies, nd that thence their first seed and rudiment transmitted by the Ureters into the Bladder; ut this opinion is contradicted by many most arned and experienced practitioners. But beuse this Controversie whether the Stone th his first beginning in the Kidnies, or bee enerated in the bladder, is little usefull for a hyrurgion, I will not stay the Reader with ndling of it.

Fernelius opinion of the

But whether there bee the Stone, or no, that e Physitian ought to know and be assured of, d by what meanes it may be knowne, he may e afterwards in the third Chapter.

CHAP. II.

Of the Causes of the Stone in the Bladder; wherein is also shewed from what meats such as are subject thereunto, ought to refraine.

BEcause every faithfull Chyrurgion and Phisitian is bound before God the chiefe hisitian, not onely to cure the sick, but by s good Councel to keep those that are cured, their health; not onely to take away the one, but to provide against the breeding of a- new ones; therefore it is required princi- lly, that the Chyrurgion know and be taught

taught how and from what cauſes the Stone in the Body of man, and eſpecially in the Bladder is generated and congealed together; but of the other ſtones which are often and numberleſſe found in other parts of the body, it is not my purpoſe to treate in this place.

The cauſe of the Stone. The Materiall cauſe phlegme, the Efficient heate.

Hippocrates, *Galen*, and other famous Authors teſtify and write, that the Cauſes of the Stone, are, firſt a raw, thicke, groſſe and earthy phlegme, collected and coagulated in the bladder, which if either by reaſon of the expulſive facultie, or the ſtraightneſſe of the Urinarie paſſages, it be ſtopped and long kept there, as in Infants, is hardned and converted by preternaturall heate into a ſtone, as wee ſee that Stones are made of a fatte ſlimy Clay by the heate of fire.

The opinion of the Chymiſts concerning the cauſe of the Stone.

The Chymiſts aſcribe the growing together and coagulation of the Stone, to ſalt, and conclude that the ſalte and tartar conteyned in the humors of mans body, is the true and naturall cauſe of the coagulation thereof, yea that the tarterous matter it ſelfe is ready and fit to breed the Stone.

The opinion of *Fælix Plate us.*

The moſt excellent Phyſitian *Fælix Platerus* of pious memory, almoſt jumpeth in opinion with them: for he writeth that there is a ſalt, ſharp, and earthy humor mixed with the Urine of ſuch as are ſubject thereunto, and that doth cauſe the Stone. This opinion may be confirmed with good arguments; but because I ſtudy for brevitie, I will ſuperſede them

em. The Reader upon this ſubject may per-
e the moſt excellent and learned Philoſo-
er and Phyſitian *Ioh. Fernelius* of the parts
d ſymptomes of diſeaſes: *Lib. 6. Cap. 12.*
aniel Sennertus in his Inſtitutions of Phyſick.
ib. 2. part. 2. cap. 9. Greg. Horſtius, Centur.
obl. Med. Decad. 8. queſt. 1. & lib. conſult. &
ſt. Medicinal. Sect. 9. As alſo *Ioſeph. Quercet.*
Conſil. de Arthritide & Calculo.

But every underſtanding man may eaſily
dge that ſomething elſe muſt needs concurre
to the hardning of the phlegme, and ingend-
ing of the Stone, beſides immoderate cold (or
as others would have it) preternaturall heate.
For if the Stone ſhould ariſe from immode-
te cold (which it is impoſſible to find in the
dy of a living man in ſo high a degree as
ould bee able to produce a Stone) heate
ould againe deſolve it; which it doth not;
d therefore cold cannot be the cauſe thereof.

The Stone is not coagulated only by cold.

And if the growing together of that phleg-
matick humor, and its tranſmutation ſhould
proceed from heat, the heate muſt bee either in
meane, or the higheſt degree; and if we can
ppoſe the heate to be of the ſecond or third
egree, the Stone then might againe be diſſol-
ed in water, as is to be ſeene by the ditting
horter of ovens and furnaces, which having
eene a hundred times hardned by heate of
re, are nevertheleſſe mollified and diſſolved in
waters.

Heate alone doth not cauſe the Stone.

And if the internall heate may be ſuppoſed

of the highest degree, that thereby it should harden the phlegmatick humor, as we see Clay and Loame turned to stonie matter in a brick-kilne, nature could not suffer nor abide it. It followes therefore necessarily, that there is some hidden thing conteyned in the humors, as we see it is the proprietie of some waters, which though they are cleare and pure, turne Wood, Chaffe and other things into stones.

A fountaine at Mottrovium turning all into stone.

At *Mottrovium* by the *Genever* Sea, in the Territory of *Berne*, there runnes a cleare and pure water out of a high Mountaine which (as I have seene) turneth grasse, hearbs, and whatsoever it meets with all, into stones, which are neither dissolved in water, nor melted by fire. Neere the Citty *Bienna* there runneth the like River from a Mountaine to the Citty wall into a narrow street where it cleaved to the ground work, and is turned into Pumicks which grow so fast, that at certaine times they must cutte it up, or else in few yeares space, it would stop the passage through the streets; Yet neere those Rivulets there are other waters which neither settle nor turne any thing into stone; whence it appeares that there is a hidden peculiar constitution and gravellous proprietie in those waters. And thus it may stand with man, that from some internall causes one may be subject to the Stone, and another not.

The like at Bienna.

An especiall observation.

In the yeare 1624 I had in cure a Citizen of *Berne*, by name *John Woolfe*, who for many yeares

yeares had beene liable to the Stone, but in the Summer of that yeare after the ſenſible feeling of ſome paine in his Loins, which laſted the ſpace of eight or tenne dayes; within few dayes he voyded neere three hundred ſtones, by the Urinarie paſſages, and the yard, without any notable heat or cold of the Loins preceding, or any ſenſible inconvenience in his body. The naturall inclination to the breeding of gravell is wonderfull. I dare upon my credit affirme it, and my ſelfe will confirme it, that in the ſpace of two yeares hee voyded more than a thouſand ſtones, ſome whereof ſtuck in his right Ureter, yet were thruſt out by Gods bleſſing, and proper Medicines. Now he is well and healthfull, and doth all his buſineſſe both on foot and horſe-back.

Some contend, that all the ſtones in the body of man are not bred of phlegme, but other excrementitious humours; becauſe that ſome ſtones are found of an Aſh colour, others yellow, red, black, and of other tinctures; when all ſhould be white, if the Materiall cauſe was of a phlegmatick and ſlimy humour. This opinion though I neither can, nor deſire to croſſe it, doth not evert the Doctrine of *Galen* and *Hippocrates*, becauſe they looke to the primarie naturall cauſe of the coagulation of the ſtone, where phlegme is found to be the principall. And if perhaps any other humour, as for example Melancholy concurre with it, then the ſtone is gray, Aſh-coloured, or black, according to the quantity of the humour flowing

Whether phlegme be the only materiall cauſe of the Stone.

of the higheſt degree, that thereby it ſhould harden the phlegmatick humor, as we ſee Clay and Loame turned to ſtonie matter in a brick-kilne, nature could not ſuffer nor abide it. It followes therefore neceſſarily, that there is ſome hidden thing conteyned in the humors, as we ſee it is the propriétie of ſome waters, which though they are cleare and pure, turne Wood, Chaffe and other things into ſtones.

A fountaine at Mottrovium turning all into ſtone.

At *Mottrovium* by the *Genever* Sea, in the Territory of *Berne*, there runnes a cleare and pure water out of a high Mountaine which (as I have ſeene) turneth graſſe, hearbs, and whatſoever it meets with all, into ſtones, which are neither diſſolved in water, nor melted by fire.

The like at Bienna.

Neere the Citty *Bienna* there runneth the like River from a Mountaine to the Citty wall into a narrow ſtreet where it cleaved to the ground work, and is turned into Pumicks which grow ſo faſt, that at certaine times they muſt cutte it up, or elſe in few yeares ſpace, it would ſtop the paſſage through the ſtreets; Yet neere thoſe Rivulets there are other waters which neither ſettle nor turne any thing into ſtone; whence it appeares that there is a hidden peculiar conſtitution and gravellous proprietie in thoſe waters. And thus it may ſtand with man, that from ſome internall cauſes one may be ſubject to the Stone, and another not.

An eſpeciall obſervation.

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yeares had beene liable to the Stone, but in the Summer of that yeare after the ſenſible feeling of ſome paine in his Loins, which laſted the ſpace of eight or tenne dayes; within few dayes he voyded neere three hundred ſtones, by the Urinarie paſſages, and the yard, without any notable heat or cold of the Loins preceding, or any ſenſible inconvenience in his body. The naturall inclination to the breeding of gravell is wonderfull. I dare upon my credit affirme it, and my ſelfe will confirme it, that in the ſpace of two yeares hee voyded more than a thouſand ſtones, ſome whereof ſtuck in his right Ureter, yet were thruſt out by Gods bleſſing, and proper Medicines. Now he is well and healthfull, and doth all his buſineſſe both on foot and horſe-back.

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Whether phlegme be the only materiall cauſe of the Stone.

Whence the ſeverall colours of the ſtone ariſe.

ing thereunto. By the ſame reaſon the ſtone is alſo yellow, red, or otherwiſe coloured by the mixture and affluence of the other humors with the phlegme, and that according to the temperament of the internall heat of the aforeſaid humors.

Therefore though as is above ſaid, there is ſome thing ſupernaturall in the coagulation and generation of the Stone in Man, which, as *Platerus*, *Horſtius*, and *Sennertus* affirme, may be aſcribed to Salt and Tartar; yet this can not evert this propoſition, *viz.* that the two principall cauſes thereof, are, the Materiall cauſe, which is a groſſe and ſlimy phlegme, and the Efficient cauſe, which is the preternaturall heat of the inward bowells. For theſe two cauſes appeare ſo manifeſtly in thoſe that are ſubject to gravell, that no man can queſtion them. A phlegmaticall, excrementious, groſſe, and ſlimy humor is found continually in their Urine, and there is no ſtone ſo little in the Bladder, but the phlegme may be there diſcovered.

There was lately brought unto me the gall of an Ox, wherein was the rudiment of a ſtone, about the bigneſſe of a beane, which was involved in that groſſe and ſlimy humor.

Nor is there any queſtion of the preternaturall heat of the inward bowells, that being apparantly manifeſted by the preternaturall and immoderate thirſt with which thoſe perſons ſubject to this diſeaſe are commonly afflicted.

Hanc

Hence it appeares, that there are eſpecially wo kinds of meats which haſten the growth nd coagulation of the Stone; firſt all ſuch as roduce a groſſe, thick, and ſlimy humor; and uch againe as heat the Liver, Kidnies, and in- vard bowells, and may inflame the blood and umors.

Two ſorts of meats miniſter matter for the Stone.

The meats which produce much phlegme, re chiefly milk and all white meats, except utter; Cheeſe alſo and Fiſh, eſpecially ſuch as ve in pooles, mud, and ſtinking waters, and vant ſcales; the extremes, heads, and bowels f all beaſts, and all ſlimy things, for which ery cauſe Veale and the fleſh of Kids, Lambs, nd all other beaſts newly weaned, if often ſed, is dangerous to Calculous perſons. What- oever is hard, groſſe, and hardly digeſted, hough it be not ſlimy, begets much phlegme; he reaſon is, becauſe thoſe meats, if they be ong reteined in the ſtomack, and cannot be digeſted, by degrees weaken the naturall heat the organ of concoction, and in ſtead of good ouriſhment, produce a crude and groſſe hlegme, which afterwards comming to the Kidnies, and Bladder, ſettles there, and admi- iſters matter for generation of gravell. All alt and ſmoked fleſh and fiſh, the fleſh of fal- ow Deare, red Deare, wilde Boare, Goats, nd Beares, all unleavened bread, and what- oever if fried in Butter or Oyle, is evill. All Paſties, Peaſe, Beanes, Lentils, Rice, Millet, Coleworts, raw fruits, and the like, are evill. dleneſſe, much ſleepe, and tipling by night make

An enu- meration of phleg- matick meats.

make the body soft and slippery, bedew all the members with phlegmatick excrementitious, and cold humors, and so help to produce the Stone. Idlenesse, much sleepe, drunkennesse, and nocturnall compotations, make the body soft and slippery, moysten all the parts with a phlegmatick, excrementitious, and cold humor, and so conduce to the generation of the Stone.

2. The efficient cause of the stone.

The next cause of the Stone, as hath been said, is the preternaturall heat of the bowells blood, and humors. These are inflamed in Men by the use of too hot things, such as are Pepper, Ginger, Cloves, Cardamomes, Galangal, Bay-berries, long Pepper, Leekes, Garlick, Onions, and the like, which are of a sharp and biting taste, strong and hot Wines, immoderate and violent exercise of the body both on foot and horse-back, hot Bathes whether in stoaves or otherwise, long keeping the bed after a sickenesse, and the like.

Hence wee see that those which have the Gout, are often troubled with the Stone, and thereby often fall into danger of death, as it happened to a person of quality at *Solothurn*, who having the Stone fixed in the Ureters on his right side for the space of 14 dayes, all that time endured much torment, and at the last was faine to yeeld to Fate, though his Physitian had used all diligence to cure him.

The reason why such as are Podagricall, are liable to the Stone of the Kidnies and Bladder, is, not only because their Liver, Kidnies, and

d Loyns are heated by long lying on the ck; but alſo becauſe by the intermitted ex- ciſe of their body, their anguiſh, diſquiet, d want of ſleepe, all three Concoctions can- t be perfected, and in ſtead of good juice hich ſhould be carried from the ſtomack to e Liver, and converted into good blood, a oſſe and ſlimy humor is tranſported thither, d thence to the Reins and Bladder, where e preternaturall heat diſperſeth the thinne d watry parts, and hardeneth the reſt.

Why ſuch as have the Gout, are ſubject to the Stone.

The beginning in deede is but ſmall, but a wly generated phlegme comming every y to the firſt gravell (which alwaies re- ines and maintaines its firſt conceived heat) degrees grows bigger and bigger, like a ndle which by often dipping in the tallow, owes to a larger ſize. The cauſe why ſome ones are ſharp and uneven, is, becauſe that her gravell and ſands ſlip into the Bladder om the Kidnies, and cleave to the ſlimy mor, involving the ſtone, and ſo harden ith it.

The reaſon why ſom ſtones are ſharp, & rough.

From hence then every diſcreet man may ſily collect, and ſee with what judgement d diſcretion thoſe ſweating potions made the Decoctions of Guajacum, Chyna, Sar- parilla, Saſſafras, and the like, are to be ad- miniſtred to gouty men: even ſo, that ſweat not procured too plentifully, whether it be one by multiplying the Bed-clothes or hot oaves, &c. for ſo all inward bowells, eſpe- ally the Liver, and Reines grow hot above meaſure,

Whether ſweating Potions are fit for ſuch as have the Gout.

measure; in the thinne and watrie humors is dispersed, the slimy easily hardned, and as well in the outward joynts as in the Kidnies may turne to a stone. It is sufficient therefore that the sicke man be sweated moderately, and nature be not forced thereunto to sweate; for so the decoction, by its attenuating and heating propriety will partly expell the excrementitious and preternaturall bad humours by sweat, partly dissolve and disperse them, and also strengthen the inward and outward parts, and comfort the sicke man.

Why Infants are subject to the stone. *Hipp. de Morb. l. 4. Galen in Com. 26. l. Aph. 3.*

Infants are more liable to this disease than those of full age or ancient people, because (saith *Hippocrates*) they often sucke unwholsome milke from their mothers dugges, or as *Galen* hath it, by their imoderate & inordinate feeding; for so they accumulate many grosse, raw and undigested humors, which are brought downe with the urine to the Bladder. Nor is their want of exercise & straightnesse of the Urinarie passages a small occasion for the generation of the Stone in Infants; for thereby the grosse and slimie phlegme is hardly voyded, their expulsive facultie especially being weake and feeble: and what wonder is it that when this grosse and clammie phlegme is retained in the Bladder, and their internall heate more intense, that they should not be more liable to this disease than any other people? For although in such as be in yeares by reason of the weakenesse of the stomack, all their internall bowells doe heape

p many ſlimie and groſſe humors, the Princi-
all and Materiall cauſe of this diſeaſe; yet
e other cauſe, to wit heate, which ſhould
rie up and harden this phlegmaticke humor,
wanting.

In the y are of our Lord 1581 Ianuary 28, y brother of 16 yeares of age died of the tone; for whome *Dr Brickman*, that famous hyſitian of *Collen*, did his beſt indeavour, hoſe obſervation was, that the principall uſe of the Stone in him was that hee ſo de-ghted in ſalt from his Childhood, that no eate could be ſufficiently poudred to pleaſe s palate. Hence his inward bowells grew ott, and were ſo inflamed, that they could ſily drie up thoſe ſlimie humors, and turne em into a ſtone. Yet there are Infants, and d men too, which delighting in eating of irt, Coales, raw Peas, Corne and Wheate, e diſpoſed to this ſickneſſe; for the naturall ate being weakened and extenuated by the e of theſe preternaturall things, in ſtead of od blood, produceth a cold and phlegmati-ll humor, as it hath often beene above re-embred.

Sharpe and ſalt meates a cauſe of the Stone.

Ioſeph Furer a Citizen of *Berne*, from his ildehood abhorred wine, but contrariwiſe meate was ſo gratefull unto him as whole rne and Wheate, which hee chawed ſmall ith his teeth and eate, yet remained ſound till the 61 yeare of his age, wherein Symp-me accrewing upon Symptome, and paines his Bellie and Loines ſtill increaſing, at laſt

An obſervation.

a great Apostemé arising about the extremitie of his Loines neere the *Os sacrum*, and there breaking, a purulent matter gushed out during many moneths, wherein at last hee gave up the ghost; whilst he was living, I have often searched him with my Probe even to the right Kidny, and if I could have prevailed after his death either with prayers, promises, or gifts, to have got license to dissect his Corps doubtlesse strange things had beene found therein.

Thus gentle Reader, thou understandest the causes of the Stone, & what diet thou ought'st to prescribe and ordaine for thy Patients, both before and after the practise of *Lithotomie*.

CHAP. III.

The Signes of the Stone.

SO many grievous and pernitious errours both about the externall and internall dis-eases and Symptoms, even such as are often mortall, or cause such grievous Symptoms & passions to abide in the body of man, that they sicke with palsies and unsufferable torments are compelled to spend the whole current of their life in miserie, doe hence arise, that the Physitian doth not well know the disease. This then must bee the Physitians first care when he comes to a cure, that hee use all di-

go

nce to finde out the ſickneſſe; for as *Hippo-*
tes teſtifieth, he that can diſcover the
eaſe may alſo cure it. I could if need
re, produce many examples to teſtify this
th, and prove that ſome *Lithotomiſts* have
plied the Inciſion knife to the Bladder, dig-
g and ſearching there, yet in the end have
nd no ſtone. Whence proceedeth this er-
ir? Even from hence, that they had not
exact and accurate knowledge of the diſ-
e and cauſe thereof. And what danger may
nce enſue to the Patient, and ſhame to the
irurgion, every wiſe man may eaſily de-
mine. But that all things may bee done
nveniently, and according to arte, the Chi-
gion ought to obſerve theſe following
ds and ſignes of the Stone.

The moſt excellent *Hippocrates*, propounds *De Morb. lib.* 4.
ſignes of the ſtone in theſe words *Cate-*
morbus, *&c.* The diſeaſe hath five ſignes,
when hee would make water, he is tor-
nted with paine, The Urine comes out by
pps, as in the Strangurie, and is ſomewhat
odie, the Bladder being exulcerated by the
ne, and inflamed. This is an evident ſigne
diſcerned by the extremitie of the Prepuſe;
metime he voideth ſand &c. Though *Hippo-*
tes in theſe words doth almoſt comprehend
things required to the knowledge of this
eaſe; yet for the young ſtudents ſake, and
t the Chirurgion may perfectly know the
neſſe before hee commeth to practiſe this
gerous Operation, I ſhall deſcribe them a

Why *Hippoc.* placeth paine in the firſt ranke of the Signes of the Stone.

little more plainely with some other signes and circumstances.

Hippocrates in the afore mentioned word doth not without cause place paine in the first ranke of the signes of the Stone, because the sick man will seldome consult with the Physitian, unlesse paine doth urge him; though to speake properly and truely it be the second signe. Otherwise I am perswaded that it is no obscure signe of the Stone, when the urine is thick & mixed with a white slimie humor especially, if after the urine hath stood a day & a night unstirred, it sticke close to the bottom of the Urinall, though to speake more strictly the stone be not then coagulated in the Bladder; and this signe I set in the first place before those signes mentioned by *Hippocrates*, that the industrious Physitian, may account it as a vantcurrier, and forerunner of the Stone, and use all diligence to suppresse the ensuing growing evill, maturely. This Phlegmatick matter is seene in the Urine, not onely as the materiall cause of the stone, that is to say the matter from whence the stone is raysed, before it is settled, and coagulated, as hath been said in the former Chapter; but commonly the sicke persons, as long as they have the stone in the Bladder, make this slimie Urine, which appeares in a higher degree of slimineſſe, according to the growth of the stone, this being the nature and proprietie of the Bladder; especially when the necke thereof is vexed, and corroded by the acrimony of the stone, and

The first signe of the Stone.

prod

uce ſuch a ſlimy and excrementitious hu-
r.

ſay (commonly) becauſe in ſome calcu- perſons, the Urine remaines pure, and e; but this happeneth to them chiefely, ſe expulſive faculty is weake and feeble, & rinary paſſages little and narrow. In ſuch ns the ſtone growes ſooner than in ſuch a turbid, thicke and ſlimie water: for theſe, phlegme, the materiall cauſe of the , is purged, and deteined in the Bladder e others where it cleaves to the ſtone, ſupplies it with nourishment and aug- tation.

Why the urine is ſomtimes cleare.

ut becauſe the like ſlimie urine is found in diſeaſes, a carefull Phyſitian ought not nclude onely upon this ſigne, but to ob- e the others following.

A ſlimie urine is no ſufficient ſigne of the Stone.

the virulent *Gonorrea*, there is alſo a gmaticall white humour, mixed with water, but their urine comes not from by drops, like thoſe that are troubled the Stone, but with a great current, and great quantitie, as if they had no diſeaſe t them, ſave only that it is vented with emity of heate, and paine; So alſo the nen which have the Whites, make a te ſlimie water, but without paine, unleſſe have had to doe with uncleane men. difference ought to be obſerved by every ſtrious Phyſician that he may have a per- knowledge of the diſeaſe, and nothing be omitted in the cure.

The second signe of the stone.

When therefore the antecedent cause o
stone is not taken away, and the generati
phlegme not prevented, but that it cur
and groweth to a stone in the Bladder,
vehement paine, especially in making w
attends it; for endeavouring to discha
selfe of the urine, the stone withall is t
downe to that most sensible part, the nec
the Bladder, which it teareth and offen
with its roughnesse, and produceth mos
sufferable paine. Their urine also if it be
pressed in the Bladder, doth often strech
delate it with such torment, that the very
rax and upper entrals of man suffer by
sent, and the sicke person himselfe doth th
his spirit will faile him and his sides bu
sunder. And this is the first signe which
downe by *Hippocrates*.

The third signe.

Thirdly the urine comes out by little
little, as in the Strangurie; the cause is be
the stone lying hard upon the necke o
Bladder, doth stop its way that it cannot
freely and as nature intended it.

The fourth signe.

Fourthly; the urine is somewhat blo
because the angled and sharpe points o
rough stone doe prike and teare the nec
the Bladder, hurting the Capilar veines
are in great number, as shall be shewed i
fifth Chapter) and so the water becomes b
dy. But this hapneth especially when the
man being willing to walke, or ride on h
backe or in Coach, moveth too violently
his body is shaken immoderately.

Fi

Fifthly, sometimes also the Bladder is inflamed, because the Urine being long retained in, and suppressed, doth so extend it, that the little veines thereof are broken, and the blood falling into the Bladder doth putrifie there, and beget an inflammation. The fifth signe.

Hippocrates writeth, that this cannot be discovered outwardly, but that the Prepuse and other part of the Yard doth shew it. The reason is, because the blood runneth by the neck of the Bladder, and because the neck hath more and more veines, than the Bladder it self, and is hurt and wounded by the roughness of the Stone, it is therefore primarily and chiefly inflamed, and the inflammation afterwards is derived through the whole Yard, even the very Prepuse. Besides, the end of the Yard is most grievously tormented in this inflammation, though the cause thereof, the inflammation, be seated in the Bladder. And this is not seene only in the inflammations of the Bladder, but also in all Calculous persons who complaine chiefly of paine in the Glans, or extremity of the Yard, though the stone, cause of all this paine, stick in the hinder part, about the neck of the Bladder, and teare or exulcerate it: and this is caused by reason of the exquisite sense of the Glans, because all the nerves concenter there.

But these Inflammations of the Bladder are commonly mortall, by reason of those grievous and dangerous Symptomes, as Feavers, immoderate Watchings, Ravenings, Convulsions, The inflammation of the Bladder mortall.

vulſions, and the like accidents which atte
them. They therefore who are ſubject to
Stone, ought to be carefull that their Urine
not ſuppreſſed, and as ſoone as they finde
ſtopping thereof, to conſult with ſome skil
Phyſitian for preſent remedy. If Bathes,
taplaſmes, Fomentations, Unguents, and
like Medicines doe not procure it, then an
perimented Chirurgion is without delay
put up a Catheter into the ſick mans Blad
and the ſick man to abſtaine from too ſtr
Diuretick Medicines: it being impoſſible
when the Urinarie paſſages are ſtopped
low, and more humors are driven thit
from the upper parts of the body, but that
paine and other ſymptomes ſhould gr
more grievous.

The ſuppreſſion of the urine is dangerous.

Nor is the ſuppreſſion of the Urine dan
rous only to ſuch as have the Stone, but to
others. The moſt learned *Andreas Tex*
Phyſitian in Ordinary to his Majeſtie of *D*
mark, my ſingular good friend, when he l
with me at *Paderborne*, told me that the
excellent and famous Mathematitian *Ty*
Brahe died upon the ſtopping of his u
This godly famous man, ſitting long at a g
Banquet in *Prague*, being compelled be
his ſtrength and cuſtome to hold his u
long, afterwards when he found a fit pla
unload his Bladder, could not voyd his u
whereupon an inflamation of the Bladde
ſued, and he died.

The ſixth ſigne.

It hath beene above ſhewed, that ſo

ve the ſtone, are troubled with a great paine
the Prepuſe or Glans of the Yard, from
hence another certaine ſigne of the Stone
mmonly followeth, which is diligently to
obſerved; to wit, that hee which hath the
one, almoſt ever, eſpecially being to make
ater, doth rub with his fingers, draw or milk
e extremity of that member; for by this
eanes I have ſeene ſome, eſpecially Children,
ve the *Membrum virile*, longer by halfe
an ordinary.

But here may ſome obiect and ſay, If the ſine about the Prepuſe and Glans be vehent, how can the ſick man endure to preſſe, d ſqueaſe that part, after ſuch a manner. Shall not hereby augment his paine? This in judgement comes to paſſe, becauſe the priry, and principle cauſe of the paine is not hat place, and becauſe the paine is cauſed efly by conſent, and affluence of the animal its, which are thence repulſed by that ſhing, and compulſion, and the Glans it e in part deprived of its moſt exquiſite ſe. That it is thus, I had experiment in my e *Anno* 1613. after the great plague at *ſanna*; I felt in my right Ancklea burning ne, which tooke me in the morning every at foure and five a clock, and I found great when I thruſt my foot hard againſt the d-ſide, or ſome other body with both his ds did ſtrongly cruſh my Anckle; for ſo the itive ſpirits, were againe driven back. nore large diſcription hereof, you ſhall

Obiect.

Sol.

finde in 4. *Cent.* 23. 86. An horſeman in Wi
ter, reſting long upon his Stirrups, feels
his feet ſo cold, that they ſeeme almo
to grow ſtiffe; wherefore? becauſe the vit
ſpirits and the blood are driven from the fe
upwards, which againe returne downward
when the feet hang out of the Stirrup.

The ſeventh ſigne.

Calculous perſons, but not all, have ſome
times gravell, and little ſtones in their Urine
and therefore *Hippocrates*, not without cauſe
added the word *Sometime*.

At *Collen*, I had in cure a man of qualitie
who would not be perſuaded he was ſick
the Stone, becauſe he never voyded Sand, n
Gravell, and yet there were foure Ston
found within him. And ſo it may come
paſſe that ſome one may have the Stone in h
Bladder, and yet void no Sand with his Urin
So there be ſome alſo which are not trouble
with the Stone of the bladder, yet thruſt for
Gravel and Sand abundantly by their watc
that gravellous and ſandy matter proceedi
from their kidnies, and little ſubſiding in t
Bladder. This a carefull Phyſitian ought
obſerve, and to diſtinguiſh the two diſeaſe
that ſo he may not appoint the cutting of t
ſtone in the bladder, for ſuch as be meere
Nephriticall.

The Stone is knowne to fall out of the Ki
nies, by the paine of the Loins, and Sides; f
ſo long as it ſticks in the Reines, ſo long
cauſeth there great or little paine, accordi
to its motion or reſt. But ſlipping throu

he Ureters into the Bladder, it causeth great aine in the side, and the sicke man may sensily perceive its successive discent, through the ensible Ureters. When it is come to the bladder, it makes its progresse with lesser paine, ecause the Yard is wider than the Ureters: or are they, who have the Gravell and Stone roceeding from the Kidnies, found to have uch abundance of tough and grosse phlegme them, as those in whom the Stone of the ladder is setled.

Besides all this, from the foresaid tearing, nd exulceration caused by the stone, about e bottome and the neck of the Bladder, ere ensues another motion of the body, no sse pointing out the Stone than the former; wit, when the sick man in making water, th fold his thighs crosse-wise, contract hipps, hang his head towards the ground, metimes with one hand, & sometimes with th, doth girde up his bellie, neere the *Os pu-*. Nature constraines him to this, because that complication of his Thighs, and conction of his Hipps, the Stone sometimes is iven upwards, that it may give the water more free passage. The eight Signe.

The sick man, besides that grievous torment the Strangurie, is sometimes also troubled ith another Symptome, to wit, a gravative avy wait lying upon the bottome of his bel- and the straight gut betwixt the *Ossa pubis*, d would force them downewards; and this caused, especially by the greatnesse, and wait The ninth Signe.

wait of the Stone. An honeſt Cittizen of *Geneva* had been afflicted with the Stone for the ſpace of 28 yeares; it was the wonder of Phyſitians, that in the very beginning of his ſickneſſe he felt ſuch a heavy wait in the bottome of his Bladder, and neere his ſtraight gut, and ſhould complaine of it throughout the whole progreſſe of his ſickneſſe, for the ſpace of ſo many yeares: Yet after his death his body being opened, and a great Stone found in his Bladder, the Phyſitians admiring the waight thereof, beate it to pouder, and in the middle thereof found a great leaden bullet, which thirty yeares before by a dangerous ſhot being thruſt into his Bladder, was then covered with phlegme and converted into a Stone. This relation I had in writing ſome yeares ſince, from a known Phyſitian of *Geneva* who himſelfe was preſent at the caſe.

The tenth Signe. The Urine doth often move the ſick man to voyd it, becauſe the Stone corrodes and exulcerates the Bladder, and ſo with its ſharp points, and acute angles, doth provoke the expulſive faculticof the Bladder, and the Urine as we have ſaid formerly, diſtilles drop by drop, but with great paine.

The eleventh Signe. The Yard is often both in Infants and men of yeares ſtiffe, and ſtanding, not out of any Venereall appetite or naturall luſt, but rather becauſe of the greatneſſe of paine which drawes unto it Spirits and a windie matter and ſo hardens it.

The twelfth Signe. They who are troubled with the Stone for

the moſt part are ſtill dry, and deſire much drink, and often. Firſt, becauſe they muſt make much water, and often, by this meanes they avoid the humors plentifully, which nature deſires to recompence for conſervation of the internall bowells in their convenient temperament and naturall Symmetrie. Secondly, becauſe the bowells are heated by the grievous continuall paine, want of reſt, and watchings, and therfore require much and frequent cooling; yea often at unſeaſonable and inconvenient times as at the night, and beſides meales. Hence then the concoction of the Stomack and Liver being hindred, the ſpark groweth eaſily to a great flame; from hence follow obſtructions, and weakneſſe of the inward bowells, Iaundies, Dropſies and the like, as ſhall be ſhewed in its proper place.

The thirteenth Signe.

When the Chyrurgian doth thruſt in his forefinger in the ſtraight-gut, as farre as he can, and afterwards turnes it a little towards the *Os pubis*, he ſhall commonly feele an hardneſſe. *Commonly* I ſay, becauſe ſometimes the ſtone lyeth in the upper part of the Bladder, and not neere the neck: for which cauſe the ſick man muſt be enjoyned, that as his ſtrength will ſuffer him, he ſhould run, dance, walk or uſe the like exerciſe; and if it be a child, let him be taken under the Armeholes and his body ſhaken ſtrenuouſly.

Yet all this is not ſufficient for the practiſe of Lithotomie; for I my ſelfe have found ſome hard ſchirrous Tumours in the Bladder, which have

have ſeemed hard to my fingers being thruſt into the fundament, as if they had been ſtones. Beſides other ſignes of the Stone, as retention of the water, a bloody humor, and the like concurre as you may ſee *Cent.2.Obſer.65.*

The moſt excellent and experienced *Coſmas Slotanus*, Phyſitian and Chirurgion in Ordinarie to the moſt illuſtrious Duke of *Juliers*, and *Cleave*, my much honoured Maſter, hath often told me, that himſelfe and the famous *Bernardus Deſſenius Cronenburgius*, had a Noble man in cure at *Cullin*, in whom appeared all the ſignes of the Stone, except that the Catheter being thruſt through the Yard into the Bladder, no calculous matter could be found. But after his death ſuch a ſchirrous hard humor was found in the Bladder, that it filled up the concavity thereof, and there was ſcarce any ſpace left whereby the water might paſſe into it; and I my ſelfe have obſerved the ſame in Women. Since therefore there be ſuch hard ſchirrous humors, which have taken ſuch deep root, as I my ſelfe have ſeene, and tried, that it is impoſſible to remove them without danger of death to the Patient; therefore no Chirurgion ſhould be ſo light-headed, and undiſcreet, as to undertake the miniſtration of ſo dangerous an Operation, unleſſe he be certaine of the event. He may make triall with his Inſtrument in manner following.

Place the ſick man upon a Bench, Forme, or Table, but ſo that his body towards the head and feet may lie bending and crooked, his,

his feet and thighes opened and parted farre asunder, and that he lie upon his back: Then take one of the Instruments for this use, and annoint it with Oyle of sweet Almonds, or fresh Butter, and put it up gently and by degrees into his bladder; if there be any stone, you shall presently discover it by the Instrument, unlesse perhaps it be growne to some part, or involved in some membrane; as I have met with some particularly in a noble personage in *Basil*, of whom I shall speake in the eighth Chapter. And in this case, because there is no roome for *Lithotomie*, the Chirurgion ought to commend the Patient to expert Physitians, that they may give him ease, by all meanes and Medicines, and take care that the disease growe no farther, as shall be shewed more largely in its proper place.

CHAP IIII.

What the Chirurgian should consider, and foretell before the Operation.

BEcause amongst the sundry Chirurgicall Operations, Lithotomie is deservedly to be esteemed one of the principall; therefore every industrious and faithfull Artist, should not like the strowling Mountebanks, and Impostors, unadvisedly apply the knife to the body of Man, as Butchers to the brute beasts; but

but firſt conſider all things well, and weigh the iſſue of his work, that he may diſcover, and report it to the ſick perſon, his kinred or friends, and underſtand their opinions and anſwers.

But firſt he ſhall not, like thoſe jugling Quack-ſalvers, offer himſelfe to the Patient, but attend till he be ſolemnly called; for ſuch as offer their ſervice, declare themſelves to be vaine ſhameleſſe fellowes, more deſirous of their own gaine, than the Patients health and ſafety, and ſuch, which that they may learne and practiſe the Art, care not though they buy their skill with the deaths of a hundred common people, as I have heard it from their own mouths.

Againe, this Noble Art, and excellent gift of God, will grow contemptible, if the Phyſitian before he is called, ſhould goe to the ſick perſon, and offer his ſervice; for ſo no botcher or ſuch baſe mechanicall man will goe from houſe to houſe to uſe his trade, but will rather ſtay at home till he be called and ſent for.

Beſides, it is required that the Patient ſhould beare a ſpeciall affection towards his Phyſitian, and put confidence in him, if he expect his cure ſhould ſpeed happily. But what affection can be borne, or confidence repoſed in him, who like a pedling tooth-drawer, renders himſelfe and his ſervice, and (that I may ſo ſay) by his light ſpeech, bragging and babbling, doth in a manner bewitch the Pa-

tient

ent to rely upon him, though it be to the
ſſe of his life.

Secondly, when he is ſolemnly called, let
im not imitate ſuch men as uſe to extenuate
d make ſlight of the matter, that they may
ot be diſmiſſed, and others called into their
ome; but truly declare to the Patient, or his
iends, the difficultie of the Operation, and
hat will follow. The iſſue of the ſickneſſe is
erefore to be knowne by the Chirurgian,
at he may betimes prevent the Symptomes,
d winne the good opinion of the Patient
d thoſe about him, when they ſhall per-
ive that he underſtands the diſeaſe and his
t by the Fundamentall Principles.

The Artiſt muſt know the iſſue of the diſeaſe.

Thirdly, the Artiſt muſt know the event
the ſickneſſe, and foretell to the Patient,
his friends, that he may avoid all blame,
d ſhame, if he attaine not the deſired end;
is Art in this age, being more ſubject to ſcan-
ll than any other profeſſion. There are ma-
now, which in ſtead of an *honorarium*, or
erited reward, diſmiſſe their Phyſitian with
nkind and contumelious words; and were it
their power, would have him in his grave;
im I ſay, whome ere-while when they were
cked with paine, they extolled to the skies,
d would not have denied him halfe their
bſtance.

A Gentleman at *Collen* being grievouſly ſick,
rmented with paine, ſent for a Chirurgian
hom I knew very well, and promiſed him
hundred Imperialls, if he could give him
eaſe:

eaſe: The Artiſt by his diligence in a ſhor
ſpace reſtored him to perfect health; but the
he would ſcarce give him one hundred ha
things, till the Cauſe being brought befor
the Magiſtrate, and the Gallant being rebuke
was injoyned to ſtand to his word, and giv
the Phyſitian ſatisfaction.

Obſervation 20. *Bartholomæus Cabrollius* a famous Chirur
gian, writeth, that he was called to a ric
young Gentlewoman, of eighteen yeares o
age, which did not make water by the ne
of the Bladder, but the Navell, whoſe Fathe
promiſed him, that he would willingly giv
him the halfe of his Daughters portion, if h
did cure her; but yet when the Cure was do
(which was perfected in twelve dayes) h
could get but one double Ducket.

I could produce more Examples of th
kind, but that I may not be tedious, I will fu
perſede the[illegible].

Yet I hence conclude not that the Phyſi
an ſhould be too reſpective of his priva
gaine; God forbid; but he rather ought to d
his office carefully to every one, rather reſp
cting the good of his neighbour, than his ow
private advantage: Yet ſuch as are able, a
bound before God, to reward the Phyſiti
labour liberally, that he may help the poo
in charity. And this is in the Scripture phra
to honor the Phyſitian.

That the Chirurgian may by Art fore-ſhe
the future eſtate of the Patient, theſe thi
are to be obſerved.

Fi

First, that he diſcerne and know whether
Stone be great or little, partly by the Cir-
nſtances, partly by his hands and finger in
the Fundament. He may know the bigneſſe
he Stone by Circumſtances, if he well un-
ſtand the beginning of the Diſeaſe: for the
ger the Stone is, the more time is required
its generation; nor can a great Stone be
d in a ſmall time, unleſſe the body of
Patient (which the Phyſitian muſt care-
y obſerve) be peculiarly diſpoſed thereun-
Beſides, a ſmall Stone is more painefull to
ſick than a great one; for that ſlips into the
k of the bladder with the urine, pricking
corroding it, and ſtopping the urine; but
great one doth not come ſo deep to the
k of the Bladder, that it ſhould cauſe ſuch
evous Symptomes. But by the finger in the
dament, he may beſt diſcover the ſtones
nenſions; And having found out the extre-
ies, angles, and height thereof, he may
hall apprehend the bigneſſe: But if he
not find out the juſt proportion of the ſtone
his finger, and is perſwaded that it is a great
e; then he ſhall examine the Patient, what
ſſe, and weight he perceives about his fun-
ment? for according to that maſſe and
eight, he may judge of the bigneſſe, or ſmal-
le of the ſtone.

Secondly, the Patients conſtitution muſt
reſpected: for if the ſtone be great, and the
tient but of ſmall ſtature, or weake, nothing

can be expected but an unhappy issue. But
the stone be not very bigge, and the Patie
strong, and of a good habit of body, there
good cause to expect an happy successe. Y
no man can attempt to draw out a stone s
mounting the bignesse of a Pullets egge, wit
out danger of death, though it be from pe
sons of vast bodies, and of strength of yout
for such an one cannot be taken away wit
out exulcerating the muscle of the bladd
and the bladder it selfe. Nor is it very safe
breake the stone; and it is doubtfull, wheth
it can be broke, because there be some sto
of a flinty hardnesse, as shall else-where
shewed at large.

Thirdly, the disposition and constituti
of the Patients inward bowels, is to be r
garded; for if the Lungs, Liver, Spleene, Ki
nyes, or Bladder be wasted, or in part co
rupted, as it often happeneth in these diseas
then this operation cannot be attempted wit
out danger of death; for Nature afterwa
from the fore-said bowells will transm
naughty excremẽtitious humors to the wou
whence paines, tumours, and other grievo
symptomes, and at last death it selfe wille
sue. This rule is also to be observed by th
Chirurgian in cutting of Ruptures; for he
not to cut any which is sick of any inwa
disease, as the Iaundies, Phthisis, Dropsie, o
the like; for otherwise, he shall soone se
him to his fathers, as too frequent exampl
testifie.

Fourthly

Fourthly, if the Chirurgian be to make this eration in an unſeaſonable time, he muſt be poſed to many miſchiefes, as ſhal be ſhewed arge in the tenth Chapter.

Fifthly, if the Patient before the Operation h not, or would not uſe requiſite Medi-es, as Purging, Bleeding, Diet, and the like, which wee ſhall ſpeake hereafter; or the irurgian through unskilfulneſſe could not ſcribe them, an happy iſſue cannot be ex-ted; for if the bad humors, and blood be not en away before the Operation, they will rward flow to the wound impetuouſly, produce the above named Symptomes.

Sixthly, after that the Chirurgian with his er in the fundament, the Catheter, or Probe, n found that the ſtone is uneven, ſharp, and of Angles, he cannot but conclude that Operation will be long, difficult, and in-ved with many dangers. This difference he ſtone doth hence in ſome manner ap-re, that a white and milky urine doth ſig-e the ſtone to be ſmooth, and even: but if urine be red, and bloody, the ſtone for cer-ne is rough, ſharp, uneven, angulous, and re painefull then the other.

How to know whether the ſtone be even or un-even.

Seventhly, It is moſt dangerous to attempt draw out the ſtone, which growes to the dder, becauſe the bladder is torne in the ex-ction, and many dangerous ſymptomes ue.

Eighthly, If the ſtone be long, like an

Olive, and the Chirurgian ſhould by chance take hold of it with his Pincers in the midſt and draw it out a thwart, the Bladder might eaſily be torne, and exulcerated.

The Stone not ſo dangerous in women as men.

Ninthly. There is much leſſe danger of the ſtone in women, then men; for the neck of the bladder in women, is ſhorter, and ſo large that ſometimes great ſtones may bee brought from thence without Inciſion, as ſhall be ſhewed in the 22 Chapter.

Tenthly. When after the Operation the tents are put into the wound, and they do not keepe it open, till the Bladder be well cleanſed, the Patient is in danger of a relapſe as it ſhall appeare in its proper place.

Eleventhly, The wound is longer a healing in old people, than young; and in ſuch as have their inward bowells weake, periſhed, or full of evill humors, than ſuch as have ſound Lungs, Spleene, and Kidnies. For the bodies of old men being full of ill humors, they ſlip ping down to the Wound, hinder its healing. And this is underſtood alſo of young people which have their inward bowells corrupted. Nor let any Lithotomiſt think, that it is all one to cut the Stone, and a Rupture, or the Lithotomie (the more is the ſorrow it is so common) can be done as eaſily as Caſtration. For there are many which have beene burſten whole yeares, or more, yet becauſe they felt not paine, their inward bowells are not corrupted, as thoſe which are troubled with

e Stone; and thence though before the Ope-
tion the needfull preparation of the body
th beene neglected, it hath beene done with
ſſe detriment; though this courſe be not to
allowed of, and it little becommeth a good
rtiſt, who muſt make his account to God, if
ius raſhly he apply the Knife to the body of
an, and without Care prepares it not, before
e Operation, as need requires, and Art in-
ynes him.

CHAP. V.

A briefe Anatomicall deſcription of the Bladder.

T is delivered as an Axiome in all Arts,
even in ſuch as be mechanicall, that he which
will uſe his owne Art to his owne credit, and
ood of others, muſt know the nature and
roprieties of the ſubject (that is the matter)
pon which he worketh. The Goldſmith, if
e known t perfectly the nature of gold, and
lver, either pure, or mixed with other Met-
ls, cannot performe any good or commend-
ble peece of work: neither will the Joyner,
Carpenter, Maſon, Blackſmith, and other like,
f they know not the quality of wood, ſtone,
nd iron, the ſubjects of their proper Trades,
ttaine to be Maſters of their Faculties, but

will be alwayes accounted bunglers by skil
full Workmen.

Man then being the noblest creatu
made by God, and the Image of God hi
selfe, they who are imployed about his bod
ought not, like a Carpenter or Mason, who
subjects are wood and stone, to apply th
Knife thereunto, but to have an exact know
ledge of that part which they are to handle
an errour here committed, being of more gri
vous consequence, than if it happened abo
other subjects. A Goldsmith if he be mistake
in his work, or doth not perfect it, takes h
gold, and silver, casteth them againe into th
Crusible, and loseth nothing but his time an
labour; nor doth the Plaisterour, Carpente
or Smith, lose any thing that can be accounte
of great value: but the subject about whic
the Physitian and Chirurgian are imployed
the body of man, and therefore it is most nec
full that he should well know its constructi
on, and divine stupendious structure. Ther
fore, good Reader, for the young Chirurg
ans sakes and their instruction, before I pr
ceed to the Cure, and dangerous taking awa
of the Stone, I have thought fit to adde her
unto a short Anatomicall description of th
Bladder.

The sight of the Bladder.

The Bladder is placed in the bottome o
the belly, compassed on each side with th
Os pubis, *Os sacrum*, and huckle bones; n
ture having so placed it, that it may the bett
receiv

eceive the thinne and whayiſn parts of the lood falling from the Kidnies thither, and ranſmit them againe through the Yard. It ies in men betwixt the two membranes of he *Peritonæum*, above the ſtraight gut, to which the neck is faſtned, and in Women bove the neck of the Bladder, to which it is ixed; ſo that the ſtately Pallace in which man s conceived, and from whence he doth fetch is origine, is ſited betwixt the Bladder and he ſtraight gut, that is in the place to which ll the filth of the body is brought, as to a Iakes-ouſe; which may juſtly abate the pride of very one that glories in his owne ſtate, and make them droope which haughtily admiring hemſelves, ſpread their plumes like a Pea-ock. But of this ſubject, the Reader may eruſe my Germane Treatiſe, or *Speculum vitæ umanæ*.

There is another Ligament, called by Ana-omiſts *Urachus*, aſcending from the bottome f the Bladder, to the Navill, where it is fixed, nd annexed thereunto, to the end that the Bladder being filled with water, may not fall ownwards, and oppreſſe the Muſcle of the eck thereof, and ſo diſable it from the reten-ion of urine, the Bladder it ſelfe being empty ometime not exceeding the bigneſſe of an In-ants fiſt, though when it is full, it doth grow o great that it may be ſometimes felt in the pper part of the *Os pubis*. In the yeare 1604 t *Paderborne* I ſaw in a man of foureſcore

yeares of age, the Urine so suppressed, that his Bladder reached almost to his Navill, and his belly swelled like a Woman great with child, whereby the bladder was so weakened, that his water voyded through his Straight-gut. Of this matter the Reader may see our second *Cent. Obs.* 65.

Apparatus parvo.

What I have spoken of the smalnesse of the bladder, the Lithotomist ought to observe when he is to cut the stone with *little preparation*: for the empty bladder being contracted, the Chyrurgian having put his fingers into the fundament, may easily together with the stone thrust the bottome of the bladder to the neck thereof, and so cut it; which cannot be without danger, the wounds of the bladder in the bottome being mortall, as *Hippocrates* testifieth *lib. 6. Aphorism.* 18. Because the bladder in that place being membranous and consisting of many sinewes, hath also some few veins intermixed, whence the wounds thereby reason of the grievous Symptomes, which immediatly attend them, are hardly curable.

Man hath commonly but one bladder, though *Riolanus* and others testifie, that in some men two have been found; but of this argument see the most excellent & famous Anatomist *Caspar Bauhinus*, in his *Theatrum Anatomicum lib.* 1. *cap.* 31.

The substance of the bladder.

The substance of the bladder, is partly membranous, consisting of nerves, & partly fleshie: the bottome is membranous, that it may be stretched

etched and hold much Urine; and againe
ntracted and drawne together; but the neck
heſhie and fenced with a Muſcle called the
hincter, whoſe office is to ſhut up the Urine,
d to hinder it from voyding, but when man
ill: This is the conſtitution of this fleſhie
ck, that, that paſſage by the help and aſſi-
nce of the ſaid Muſcle may be ſo ſtopped, that
e drop of Urine may not run out of the blad-
r; but when the bladder is filled, or the u-
ne hath gotten any preternaturall acrimony,
d nature deſirous to disburthen her ſelfe of
at waight, the Muſcles of the Abdomen are
etched, and preſſed downwards upon the
adder, and ſo the Sphincter is opened and
th let forth the urine. Nor doth the Midriffe
hich divideth the Thorax (the place where-
the heart and lungs are conteined) from
e lower bowells, give ſmall help for the ex-
ulſion of the urine out of the bladder. For in
ne voyding of water it doth alwayes by force
ruſt downe the Stomach, Liver and Spleene,
hich againe preſſe the other bowels lower,
en to the Bladder. But that the Midriffe may
e more effectually be depreſſed, *oftentimes*
e breath is to be held, becauſe thereby the
ungs ſwell, and are dilated, and ſo increaſe
e depreſſion of the Midriffe. I adde this word
Oftentimes) becauſe the breath is not always
eld in voyding urine. Luſtie, ſtrong, young
en having their bladders full, may make
ater without any ſtopping of breath except

When the breath is to be held at the voiding of Urine.

in

in the end, when there is almost nothing l
in the bladder, at which time even they al
must a little hold their breath. This doth then
arise, because young men have the expulsi
faculties more strong, and the Urinarie passa
more large and slipperie than old men
whose bodies are so dried and withered a
their strength so weakned, that oftentim
they can hardly without holding of the
breath void their Urine.

Women make water more easily than me
because the neck of their bladder is shorter
and so large that not onely their urine, but th
phlegme also, & what ever else is contained
the bladder, without any vehement forcing
stopping of breath (especially when they a
young) may easily issue out: but in elder wo
men I have often observed that they could n
void their water without holding their breath
and much enforcement; the reason whereof
is, as we have said of men, because their bo
dies are drie and withered, and the strength
nature faileth them.

Next to the foresaid Muscle or Sphincter
nature hath placed two Kerneils, called *Pr*
stata, into which the seed of man is gather
when it is perfectly wrought by nature, a
reserved to its use.

Of the *Prostatæ* and their use.

These two parts, to wit the Muscle of th
bladder or Sphincter and the *Prostatæ* a
chiefly also to be regarded by the Lithotomis
especially when he is to cut out the Ston
wit

with little preparation; for if the Sphincter, or Muscle of the bladder should be cut, or torne with instruments, the sick man would not be able to reteine his urine any longer; but as it falleth by the Ureters from the Reines into the Bladder, so also it would distill by drops through the Yard. And if the forenamed Kernells or Prostatæ should be cut or torne, then the man would be barren and unfit for generation.

Of the membranes of the Bladder.

The Bladder consisteth and is made of three kind of membranes; the outward whereof proceedeth from the Peritonæum, or inward membrane of the Abdomen, and is thick and strong, that the bladder may not break when it is inlarged, and stretched by much urine. Besides by the help of this membrane, the bladder is fastned to other neighbouring parts, and therefore it doth not stick, nor is fastned so close to the bladder as the other two, which (to speak properly) make the bladder, and are so closely joyned together, that many have thought them to have been but one Membrane or Tunicle. These membranes are grosse, thick, tender or thinne according as the bladder is stretched with the quantity of water: yet where the bottone and the neck of the bladder, as also in those places where the Ureters are knit from the Kidneyes into the bladder, they are alwayes thicker than elsewhere, and especially about the neck of the bladder; least those parts should be weakned by the sharpnes of the urine, and the Stone.

The

The inward membrane of the bladder i
cleane, white, thinne, ſlender, ſubtill and of
nervous matter, which doth cauſe it to be
moſt exquiſite ſenſe: and, as all the other mem
branes which are to be drawne out and con
tracted, it is formed of three ſorts of ſinewi
ſmall veines; whereof ſuch as are ſtraight
inward, the thwart ones outward, and th
crooked in the middle: by the help of th
fibres the bladder performeth all its offices
that is, drawes, retaines, receives, and agai
expells.

But leſt the bladder ſhould be weakned b
the acrimony of the urine, it is lined with
with a ſlimie little skin, which, as the Anat
miſts think, is made of the excrements of t
third concoction. This ſlimie humour, is oft
found in the water when there is any ſtone
the bladder. The middle Tunicle of the Bla
der, doth ſomething ſurpaſſe thoſe afore me
tioned in thickneſſe, and is inter-woven wi
fleſhie fibres, not red like thoſe in the Muscl
but whitiſh like thoſe in the ſtomack a
ſmall gutts. By the help of theſe fleſhie fibr
(in my opinion) it comes to paſſe, that t
wounds of the bladder may ſometimes be c
red and conſolidated. By them alſo the n
rall heat of the Bladder, though otherw
ſmall, is cheriſhed, and augmented, and t
bladder aſſiſted in the voyding of water, b
cauſe they ſomething thruſt it together.

But it ſeemeth a wonder to many, how t
un

rine falleth into the bladder, there being but ne hole to be seene in it, and that in the neck, hen it is taken out of the body; whence *Asclepiades* a man of excellent learning amongst he ancient Philosophers, and Physitians, hought that like a cloud and vapour, it went to it by insensible transudation; and was afterward turned into water, which erroneous pinion *Galen* hath confuted in many places.

At this very day wherein the art of Physick brought to perfection, so many excellent en having illustrated it by their writings, nd yet daily teaching it in the Universities, nd shewing it by ocular demonstration, there re some to be found, not onely amongst the ulgar sort of men, and such as want Arte, hich follow *Asclepiades*, but even amongst he Chyrurgians themselves which have no nowledge of Anatomie, or the subject which hey handle. Hence if there be but mention nade of Ureters, they stand amazed, seeing here is but one only hole in the bladder to be eene, through which the Urine runs out. It s much to be lamented, that the most noble Arte of Chyrurgery, should be brought to this asse that many would be counted perfect Artists which know not the first grounds of arte; hey challenge the titles of Cutters of the stone, nd Cutters of Ruptures, when they know ot the constitution and the Anatomie of those arts; and therefore it is no wonder, that the ick languishing people should either dispaire

of

of help, or els make ſhipwrack of their life and health.

But to returne to my purpoſe, it is thus: the bladder hath three holes, two a little above the neck, to wit on each ſide one, where the urinarie paſſage called by the Anatomiſts the Ureters, falleth from each Kidney. Theſe then being planted into the bladder on both ſides (as hath been ſaid) have each their peculiar membrane whereby that Urinary paſſage is ſtopped ſo cloſe, that not only the water, but the wind alſo cannot goe back and breake forth, as we may ſee in the clicket of the bellowes, which being cloſed, vent out no wind, and the more they are blowne, reteine the ſpirit the ſtraighter: ſo alſo theſe double dores called by the Anatomiſts *Vaivulæ*, are ſhut ſo cloſe, that even wind, when the bladder is blowne full, cannot break through them.

Theſe Ureters ariſe from the Kidnyes, and deſcend and fall downe on both ſides, within the *Peritonæum* or inward filme of the Abdomen to the bladder: they are white, and thence by ſome are called Nerves, and are in nature like Nerves, and conteine little blood: they are round, but not very large, except only in ſuch as have the Stone, in whom they are ſo dilated by degrees, that ſometimes ſtones of good bigneſſe are voyded through them; but if it happen at any time, that the ſtone ſtick in the Ureters, a danger not deſpicable doth enſue it; for that retention of the ſtone by reaſon

The retention of the ſtone in the Ureters dangerous

f the moſt acute ſenſe of the part, doth after-
ards produce a grievous paine attended
ith tumours, inflammations, the Gangrene,
d death it ſelfe, as I my ſelfe have often
ene, and that not lately.

The Ureters alſo, by the ſmall and little
res of the veines and Arteries, receive nou-
ſhment from the neighbour parts, which
ep them in life; The nerves alſo derived
rtly from the ſixt conjugation of the braine,
d partly from the back-bone, are derived to
em, whence that moſt accurate ſenſe and
ine of the Loins, when the gravell or ſtone
ls downwards from the kidnyes into the
adder, hath its beginning. And let this ſuf-
e to be ſpoken of the two upward paſſages,
Ureters, by which the water falls from
e Kidnyes into the bladder.

The third hole in the bladder is its neck, or
wer *Aqueduct*, known to every man, by
hich the urine, phlegme, gravell, ſtones,
d other preternaturall contents paſſe out of
e bladder. It is fleſhie, but interwoven with
ny ſmall veines, by which reaſon the
ounds thereof are eaſily cured.

Of the Sphincter and Proſtatæ we have
oken formerly, and it is needleſſe now to
ke any repetition.

But that this Urinarie paſſage is more large
n the two former, it is hence manifeſt, be-
ſe that oftentimes when the ſtone doth
l from the Kidnyes to the Bladder, it cauſeth

grievous

grievous pains in the Ureters; but being
the Bladder, it is often voyded without pa
through the Yard; and yet this passage throu
the Yard is much straighter in men than w
men.

One thing more must not be omitted
the conclusion, to wit, that on both side
the neck of the Bladder, there are some ve
and arteries derived to the Bladder and
neck thereof, which are deducted from
Hollow veine, and great Arterie, after it is
vided under the Kidnyes; from the veine t
it may minister nourishment, and from
Arterie, that it may communicate heat to
Bladder and neck thereof.

An admonition to the Chirurgian.

These veines and arteries are carefully
be observed by a Chirurgion in cutting of
Stone, that so he may forbeare them, as m
as may be; which he can scarce doe, w
he goeth to work with small preparati
for then they are so tumbled and thrust
gether by his fingers in the fundament, t
not some one, but many branches thereof
be cut; But when the work is done by
Itinerarium, then all the veines are exten
in length, neither can so many sprigs of t
be cut, as every wise man, if he will scan
well, may easily judge.

Let this suffice for a short Anatomicall
scription of the Bladder, and as much a
needfull for a Lithotomist to know. He
will be instructed farther, let him advise w

G

len, Veſalius, and principally with the moſt ellent and famous Anatomiſt and Herbaliſt *ſper Bauhinus* in his *Theatrum Anato-cum.*

CHAP. VI.

hat the ſick man from whom the Stone is to be taken, ought to conſider, and how hee ſhould prepare and diſpoſe himſelfe for this dangerous Operation.

A Very carefull and provident Maſter of a Family, being to build a great and ſtately uſe, will firſt take care to provide needfull terials, as wood, ſtone, and whatſoever ſe is requ ſite, and then looke out for an in-ſtrious, skilfull, and faithfull Architect. ecauſe therefore, good Reader, in the moſt fficult, and dangerous practiſe of all that can made upon the body of man, there is matter more conſequence than in the building of a uſe or towne, and the life (as they ſay) metimes depends upon a twined threed; erefore thou ſhouldeſt be carefull to doe thing raſhly, but with maturity of coun-ll and diſcretion: for to be too haſty in this ſe, and to omit any thing, is to haſten thine wne deſtruction.

Firſt therefore and before all things becauſe e houre of death, and the departure out of

this life is unknowne, and the Lord will co
like a Thiefe in the night; yea, becauſe
this great and dangerous Operation, life a
death doe ſo wraſtle together, that no m
can tell which of them will have the victo
thou ſhalt firſt therefore ſet thy houſe in o
der, that if thy houre be come, thou maiſt d
part out of this life with a cleare conſcienc
and thy Children and heires after thee may
free from all difference, ſtrife and diſſentio
Then thou oughteſt to make thy peace wi
God, to confeſſe thy ſinnes and treſpaſſes
him from thy ſoule, to repent ſeriouſly, a
not only with a pure heart to implore his d
vine aſſiſtance and preſence, thy ſelfe, but a
to ſollicite the Chriſtian Churches, and co
gregations to remember thee in their praye
for the prayers of the faithfull availe muc
and pierce the very clouds, as I have found
wayes, in the moſt difficult caſes, where
things appeare deſperate, and chiefely in t
extraction of a dead conception.

An Obſervation.

In the yeare 1610, the 14 of May bei
mooneday, the moſt noble and excellent Lo
Zacharie Geizcoſter a *Geilenback*, Lord
Haunſheim Weſchenburen and *Möes*, Knigh
and Councellour to his ſacred Imperiall M
jeſtie *Rodolph* the ſecond, Arch-duke of *A*
ſtria, being to be cut of the Stone, his Sub
jects were not onely called together th
ſame day at the Church of *Haunſheim*, and ad
moniſhed to make fervent prayers for him
th

he whole aſſembly, but the day before alſo in
ll the Evangelicall Congregations of *Aug-*
urg, Ulme, and *Laugengen*, there was men-
on made both of this perſonage, and the dan-
erous Operation to be made in his body, and
e Lord was invoked, and prayed heartily to
eſſe the Work, and Cure; and that not un-
fectually, the Lord ſo bleſſing it, that all the
ople were taken with admiration.

Many examples of this kinde I could pro-
ce, but that I ſtudy for brevity. It were
erefore much to be wiſhed, that in all theſe
ngerous and great adventures of cutting the
one, cutting of Ruptures, and decouping
nbs, all Lithotomiſts and Chirurgians were
joyned by the Magiſtrate and Paſtor to ob-
rve this Chriſtian cuſtome; whereby often-
nes both the bodies, and ſoules of many ſick
rſons, which either under the hand of the
irurgian, or little after, die without any
mfort, or preparation, may be preſerved.

I would therefore deſire the ſupreme Ma-
trate every where, and the Rulers of the
urch, to take a care for theſe poore ſoules
ich lie here and there in Hoſpitals for Chi-
gerie, and to ſupply them not only with
ngs corporall, but alſo ſpirituall; and that
o becauſe if they faile in their duty herein,
y muſt give an account thereof at Gods tri-
all. Hereunto that ſhould alſo ſtirre them
which our Lord Chriſt Jeſus will ſpeake
o them and all men elſe, at the day of

Judgement, whatever yee have done to the leaſt of mine (meaning the poore) yee have done to mee. How then ſhall they be deal withall, which in his members (the poore) ſhew themſelves ſo ungratefull to him wh underwent death for them, delivered them from everlaſting puniſhments and torments and in this world raiſed them to the height of honor above their fellowes? the Lord will thus ſpeake unto them in that laſt day, Depart from me ye wicked into everlaſting fire pre pared for you and the Devils; for I was hun grie, and ye gave me no meate, I was thirſti and ye gave mee no drinke. In which word not only corporall meat and drink are t be underſtood, but alſo Spirituall, to wit helpe, comfort, and exhortation at the poi of death.

Malefactors being to undergoe their p niſhment, have ſome Preacher aſſigned the for the ſalvation of their ſoules, and that wi good reaſon; and why then is it omitte when people are to be diſmembred, or cut f the Rupture or Stone? ſince death there is n only eminent, but the ſick man alſo doth faint under the burthen of pain, that it is to feared leſt he ſhould die deſperately, diſtru ing of grace and mercy, unleſſe he be cheri ed with ſome Chriſtian conſolation, whi as a common concerne, I leave to each m meditation.

CHA

CHAP. VII.

hat Physitian the sick man ought to chuse, and with what Vertues he ought to be endewed and adorned.

AS a wise and discreete Householder, having provided all things needfull r his building, as Wood, Stone, Lime, and e like, and disposed them all in order, nei-er hireth nor trusteth every Carpenter, or aisterer, but doth use all care to get a faith-ll and skilfull Architect; so also the sick an should endeavor, not to trust his body d life with every Emperick, wicked, hair-ained and unskilfull fellow, especially in is disease of the Stone, but should regard e condition of the man whom he useth for unsell, and whether he be indued with ese following vertues.

How the Physitian is to be qualified.

irst therefore hee shall take care that e Physitian be godly, faithfull, honest, ameless, not given to blasphemie or other ces; for though godlinesse be needfull for sorts of men, yet it is most requisite in ch as practise Physick; for God Almighty th often abate the power of the Medicines, hen he which administers them, is an un-odly and blasphemous man: and contrari-ise, doth give wonderfull power to things

deſpicable and vile, when they are adm
niſtred by good and godly Phyſitians.

Let him not be given to drunkenneſſe, l
and gaming; for thereby ſome thing may
omitted this day, which cannot be repai
to morrow, becauſe occaſion is haſty, and
be taken ſpeedily, as *Hippocrates* teacheth, *lib.*
Aphoriſ. 1.

Let the ſick man beware of ſuch as be p
ters, and think gloriouſly of themſelves, a
there were none like them, and promiſe ma
impoſſible things; for it often falls out
cording to the Poet,

Inſipienti major ineſt jactantia venti,
Vas etenim pleno tinnit inane magis.

The greateſt bragger is the leaſt profound,
As empty veſſels make the biggeſt ſou

Beſides, it is ſometimes tedious, and tr
bleſome to a ſick man, when the Phyſitian
others uſe much tattle, laugh, and toy. Ho
ſaith *Menander*,

Medicus loquax alter languenti morbus e

A prating Leech doth doe his Patient wr
An other ſickneſſe ſits upon his tongue.

Such a one I once ſaw at a Noble m
houſe, who thought, with much talk, and
ſtruments of Muſick to recreate and deli
the ſick perſon, who preſently comman

Steward to pay him his Fees, and sent him cking. I wondring at his Action, hee told that he would then send for him againe hen he purposed to keepe a feast of jollity.

Let the sick man also diligently enquire. hether the Physitian be rash, & hair-brained, many (more is the griefe) are found, which ill no more refraine the cutting of a mans dy, than a Carpenter or Mason doth wood or ne; and though they see no hope of preser-ng the Patient by Lithotomie, nevertheless ey care not, they take his mony and deceive e world; that is, fearelesly and without ad-ce of the skilfull, they make incision on his dy; a thing not to be allowed of; for here there is no hope of recovery by Litho-mie, the thread of life is not to be cut off shly. Nor can it excuse them, though they etend it was their Patients desire, that he en-eated them to doe it, that he had rather die, an live longer in such misery and torment. o surely, this is not the way to heaven; we ust know, that the houre prefixed us by God, ust be expected with Christian patience, and at also *through many tribulations we must en-r into the Kingdome of heaven.* Every indu-rious Phisitian ought to propound this to his atient, and to comfort him thereby, and af-rwards to think of, and apply all those eanes, and wholesome Medicines which may itigate his paine. Act. 14. 22

Nor is it a small argument of rashnesse,

when the Chirurgians doe not carefully enquire and ſearch whether there be any Stone in the Bladder or no, but being induced with ſome ſlender ſuſpition and ſignes of the Stone apply the Knife unto the Bladder, ſearch it with their Pincers, and finde no ſuch matter there (as I have knowne it fall out) becauſe the Chirurgian muſt give over with ſhame, leaving his work undone, and the wound againe is to be conſolidated.

The wound is not preſently to be cloſed up after the inciſion.

It is alſo an argument of raſhneſſe, when the Lithotomiſt as ſoone as the Stone is taken out, would heale up the wound, and make poſte haſte to do it; for ſo the phlegme, gravell, and the like, remaine in the Bladder, and ſtirre up new ſymptomes of a worſe condition than the diſeaſe it ſelfe.

Nor is it leſſe raſhneſſe, when ſome of them will cauſe their Patients whom they have cured for the Rupture, to riſe out of their beds the third, fourth, or ſixth day, hunting after vaine glory, before the *Peritonæum* be well healed; for then oftentimes the Guts fall down again and produce mortall ſymptomes, which at this time it is to long to repeat.

But it is more to be lamented, that ſome out of meere raſhneſſe, and indiſcretion (as I my ſelfe have knowne) lay the ſick man upon the Forme, binde him, and inſteed of a burſten man fall to cutting of a ſound one; theſe are juſtly to be puniſhed by the Magiſtrate for their villany, and to be paid in their own coyne

oyne; for it is written, *An eye for an eye, a* Exod. 21.
oth for a tooth, a foot for a foot, &c. They who 24.
ave care of their life and health, will take
eed of such wretched fellowes, and not trust
o much as their skinne in their fingers.

Besides all this, it is chiefely required, that The Chi-
he Lithotomist & cutter of Ruptures, should rurgian
e well versed in the Anatomicall part of must be a
hysick; for without it what good can they good Ana-
oe on mans body, and principally on that tomist.
art in which the work is to be done, seeing
he nature, propertie, & temperament of that
hing which is to be handled, is to be exactly
nowne and understood? The Chirurgian that
noweth not Anatomie, may easily in dissecti-
n take & cut one thing for an other, as it hath
ften happened, and I have shewed elsewhere
y examples.

Furthermore, let him be no meere stark Emperick, which hath nothing but bare experience, but one who hath learned something of the grounds of Art, that hee may know the nature and constitution of the sick persons, the causes of the diseases and symptomes, and prevent them when they are discovered, because it is impossible he should alwayes have a Physitian at his elbowe. It is therefore to be wished, that all that would be Chirurgians, be a little brought up in good literature, that so they may have accesse to *Hippocrates*, *Galen*, *Avicen*, *Ægineta*, *Celsus*, and others the chiefe fountaines of Physick, and thence gather and learne

learne the grounds of arte. But becauſe theſe Studies are now contemned by our Germans, it is no wonder that this Arte of ours is buried in the mire, and other Nations ſo farre exceeds us.

Likewiſe alſo the ſick man, ſhould beware of ſuch giddie Fellowes which would attaine the Art, though their knowledge were to be gotten by the death of a hundred common men; they beginne the worke, and care not whether it proſper or not, or the Patient live or die. This ſort of men thinke it ſufficient, if the ſick man, as one of a deſperate eſtate, hath truſted himſelfe with them, and conclude there needeth no other excuſe before God or man. Theſe are looſe fellowes without Conſcience, and Science, of whom the ſick man muſt carefully beware: it being moſt needfull, that a young Lithotomiſt ſhould ſee the Stone cut by other skilfull practitioners, as every man by himſelfe many eaſily determine: Nor ought the Phiſitian to be addicted to covetouſneſſe, his owne private profit and gaine; for by this meanes, the ſick doe often fall into much miſery, and are ill provided for; to wit when the Phiſitian through covetouſneſſe and deſire of lucre is ſparing in his proviſion, and doth not adminiſter thoſe things which are convenient and needfull: or when he ſhould take care for his Patient, followeth ſome other buſineſſe, and committeth him to ſome Novice, and forſakes him.

To

To conclude, he ought to have a firme, ſteady and ſtrong hand, as alſo a quick ſight, that he may diſpatch the work with expedition, and the ſick man may not long be delayed and tormented.

But it ſufficeth not, that the Phyſitian be indued with the foreſaid vertues, induſtrie and experience; but it is farther required, that the ſick man next after God (the Phyſitian of Phyſitians) put his whole truſt in him, and affect him with a ſingular love: for if the Patient bend his brows upon his Phyſitian, or rayle againſt him, or frumpe him without cauſe, and would have his diſeaſe and maladie to be taken away, as with a ſponge, and raked out with his nailes, as if it were in his power to handle, governe, rule, extend, or contract the diſeaſe at his will, as the Gold-ſmith doth handle his gold and ſilver, and the Black-ſmith his iron. Yea if the ſick man doth not acknowledge his diſeaſe to be ſent from God almighty for his ſinnes, to bring him to repentance, and abſtaine from them, then God doth juſtly puniſh that great ingratitude of the Patient towards the Phyſitian; neither doth he bleſſe his labours, and medicines, as it might otherwiſe be, if the ſick perſon would ſhew himſelfe curteous, both in words and deeds, and thankfull according to his ability. In a word the holy Scripture commandeth us to honour the Phyſitian, becauſe the Almighty hath appointed him, that is, hath called him to this office and vocation.

vocation. In which words the Scripture doth diſtinguiſh who are lawfully called to this work, and approved by the learned, from thoſe who not after the wonted manner enter by the gate, but like Thiefes creep in by windowes and backdoores, and by whom the ſick men are deprived of their health, with their goods and eſtate. Such are idle unskilfull Montebancks, Juglers, vagabonds, executioners and other deteſtable villanes of this rable, whom many would ſcarce truſt for a farthing, when as in the meane time they truſt them with their health both of their body and ſoule; So farre the Divell hath blinded men, for no other cauſe but our ingratitude towards God, and becauſe we deſpiſe his heavenly, wholeſome and pretious gifts. Whoſoever therefore ſhould be ungrateſull to a faithfull and induſtrious Phyſitian, being ordained by God, whether in word or deed, much more by keeping back his reward, (of which ſort I have often met with many) he may eaſily perſwade himſelfe that God will be avenged of him, for the labour and trouble which the godly honeſt and faithfull Phyſitian hath undergone for the ſick mans ſake.

When therefore the ſick man hath got a Lithotomiſt endued with theſe ſaid vertues, and hath diſpoſed of his buſineſſe as is aforeſaid, he may (firſt deſiring Gods aſſiſtance) ſubmit himſelfe to the Operation.

And this may briefly ſuffice concerning thoſe things

hose things which rest to be considered by the ick man before the Operation.

CHAP. VIII.

What must be considered by the Lithotomist, before the Operation, both in respect of the Stone, and the Patient, where is also shewed that the extraction of every stone is not to be attempted, and that all sick persons are not fit for Lithotomie.

IN the former Chapters we have briefly declared how the sick man ought to prepare himselfe for cutting and what manner of Lithotomist he should chuse: it now follows that wee adde something of the Artists duty; and set downe all things methodically. I will so dispose them, that I will first declare what the Lithotomist ought to doe and indeavour before the Operation; Secondly, in the time of the Operation; and lastly afterwards.

What Artist soever, in this dangerous and difficult worke, desireth to doe any good, and to serve his Neighbour faithfully, and to appeare before God, and not incurre eternall damnation, must first with all diligence find out the model of the Stone, and then the nature of the Patient, and attempt nothing unadvisedly;

sedly; the manner whereof we shall unfold more largely as followeth.

What is to be enquiredin respect of the stone. 1. Whether there be a stone or no?

As concerning the stone, it must First be inquired and tried whether there be any stone there or not; nor are those rash and bold Empericks to be imitated, who upon a sleight suspicion of the stone, without farther inquisition, apply the Knife, expose the sick person to extreme danger, and themselves to scorne. There can be no absolute confidence upon the outward signes of the stone, nor by the tryall of the fingers in the fundament; for in the dissection of dead Corpses, I have sometime observed that hard scirrhous Tumors might be felt, and have beene found, which, while the man was living, have appeared by the fundament as hard as stones; and which is more, that those hard tumors about the neck of the bladder, have caused almost the same symptomes which the stone would have raysed, if it had beene there.

Vide Cent. 2. Obs. 65.

That these hard and scirrhous Tumors cannot be taken away by incision without danger of death, it hence appeares, because as I my selfe have seene it, they are firmely fastned, and growne to the bladder and neck thereof, as if they with the bladder had made but one body. The best and surest meanes then to find out and discover the stone, and distinguish it from those hard tumors bred in the bladder, is done by searching with an instrument; for it cannot be discerned by thrusting of the fingers into

nto the fundament, though the bigneſſe of the
one be thereby commonly diſcovered.

Secondly, it is needfull to know the big- 2. The
neſſe of the ſtone; for if it be over-great, no- greatnes
hing elſe but death can be expected; and it of it.
ften happeneth that the Patients die either in
he time of the Operation, or little after.

Andreas Vitellius, a famous cutter of the *Vide*
tone and Rupture, in the yeare 1602, upon *Cent.* 4.
All Saints day, at *Hastingen* in *Marchland*, *Obſ.* 51.
ooke a Stone from a young man, which
eighed 22 ounces, but the Patient died that
ery houre, and under his hand. I could pro-
uce many other examples if need required.

That ſentence therefore of *Cornelius Celſus*, *Deſperati non ſunt attingendi*, that is, that the hyſitian ought to forbeare where he ſeeth no ope of cure, muſt take place when the Phy-ian knoweth certainly that the ſick perſon ill die; yea, it appeareth a raſhneſſe in a ithotomiſt to practiſe his Art upon ſuch Pa-ents, becauſe the ſick man may perhaps live ith his diſeaſe, to the ſervice of God, and ood of his Neighbours: beſides that, the fact hardly excuſable before Almighty God. herefore every godly and faithfull Artiſt, ould commit ſuch Patients, to the care of arned Phyſitians, and Divines; to the Phy-ians, that as much as they can, they may a-te and aſſwage his paine; to the Divines, at they may give him comfort, and exhort m to Chriſtian patience and conſtancie, till

the

the greateſt Phyſitian ſhall give the remedie; experience teſtifying, that many ſick perſons afflicted with this diſeaſe may ſtill ſurvive.

Petrus Pigray, an experienced Chirurgian, *Lib. 7. Cap. 4.* writeth, that he knew a Noble man who had the Stone 25 yeares, yet without any notable paine, becauſe when he was to make water, by application of his Inſtrument he did it without paine.

And this being ſo, why ſhouldeſt thou, O Chirurgian, expoſe the body of thy Patient and thy owne ſoule to danger?

Moreover, if thou be certaine alſo (which certainly is hardly attained to) that the Stone doth grow unto the Bladder, then Lithotomie is not to be preſcribed; becauſe in pulling the way of the Stone, the Bladder would alſo be torne, and nothing could then be expected but danger of imminent death.

In the yeare 1610, I was called out of *Alſatia* into *Baſil*, together with the moſt famous and learned Phyſitians, *Felix Platerus*, and *Caſpar Bauhinus*, to one of the prime Nobility there, who for many yeares had been grievouſly tormented with the Stone, yet no Lithotomiſt could ever perceive any Stone to have beene there, though he had adviſed with many moſt experienced Phyſitians. Nor could I my ſelfe with all my care and ſtudie, applying both my finger and my Inſtrument, find that there was certainly any Stone in the Bladder. Yet in this man, as *Bauhinus* my fa-

gui

ular friend told me by word of mouth, and eſtifieth in his *Theatr. Anatom. lib.* 1. *Cap.* 31. fter his death there were found ſome great tones encloſed in a peculiar Bagge, or Pa-icle growing to the Bladder. If therefore ny Lithotomiſt or Cutter ſhould have only bſerved the ſignes of the Stone, they were all pparant in this noble perſonage, ſave onely hat nothing could have been found out by the nger or Inſtrument, and if afterwards he hould have uſed his arte, and have thruſt in is Pincers, and as it might eaſily have happe-ed, have pulled the ſtone with its Bagge, in what caſe had this ſick man been? Surely in he ſame that many others are, which fall into he hands of unskilfull and light-brained men; nd have died ſuddainly with extreme tor-ent of his Bladder, and Inflammation of all is bowells, when nevertheleſſe bearing his ckneſſe about him, he was able to live many eares after to the ſervice of God, and the go-ernment of his Family. Nor is it to any pur-oſe that many profeſſing this Arte, ſay, that he Dye is caſt, and it mattereth not how the ck man be delivered from his paine, either by his way, or that; we muſt not ſo conclude, or God Almighty doth often viſit and chaſtiſe ur bodies in this life, with theſe and other iſeaſes, that wee may thence learne to ortifie our fleſh, that our ſoules may be ved. This *Saint Auſtin* well obſerved when e prayed to God ſo earneſtly ſaying, *Hic ure,*

hic secant in æternum parcas. And this againe I repeate, that the Chyrurgian knowing (as he ought to doe) that there is no hope of recovery by Lithotomie, he should not attempt it.

The constitution of the Patient is to be considered.

As concerning the sick man, it is first before the Operation to be carefully inquired, whether he be a fit subject upon whom the Operation may be made? for if there be a great stone found in an Infant (as it often happeneth) it is manifest to be concluded that it cannot be taken away without danger of death; because they are too weake and impotent to endure that great torment, which attendeth this Operation; whence *Cornelius Celsus* and some of the Ancients would not have children cut of the stone before they were nine yeares of age; yet experience testifieth, that many, of fewer yeares have happily indured the Operation, and been cured; especially the stone being of a small size.

The same reason holdeth also in old men; for though the Dimension of their bodies may seeme to have some proportion with the bigness of the stone; Yet it is to be considered that their bodies are dryer and more withered than the bodies of young people, & that therefore their skinne, muscles, veines and the like, cannot so easily be extended and dilated as in the younger sort, which have a hot and moyst temperament. Nevertheless I have seene this practise to have sped happily in old men; but

hen indeed the ſtones were not very great.

In the yeare 1610 *Iacobus Iohannes Mirck* he moſt experienced Lithotomiſt of Ulme, in ay preſence, and in the preſence of many o-her famous men, drew out two ſtones (one whereof weighed ℥xiij.) from the valiant nd Noble Lord *Zacharias Geizcoſter* Lord in *Geilenbach* and *Hauſheim*, Knight and Coun-ellor to his Imperiall Majeſtie, and the ſaid Lord recovered his former health, lived many eares after the Operation, and did good ſer-ice by his ſage counſell to the Roman Em-ire.

In the yeare 1598, the 28 of July, at *Viva-ium*, neere the lake of *Lemane*, I my ſelfe took Stone from the Noble Matron *Urbana Hu-enin*, (a woman of forty yeares of ge) bigger than an Henns egge, who was ecovered, and lived in health, ruling her chil-dren, and governing her family untill the eare 1611, and felt no paine of the ſtone un-till her dying day.

Secondly the tempetament of the ſick man ought to be carefully obſerved alſo; for if the Patient be growne weake by the vehemencie nd continuance of paine, ſo that the internall owells, as the Lungs, Liver, Kidnyes, &c. e in part weakened and putrified, then this Operation is not to be appointed; for both coſt nd labour is loſt, and the ſick perſon will dye y the Symptomes which immediately en-ue it.

hic seca ut in æternum parcas. And this againe I repeate, that the Chyrurgian knowing (as he ought to doe) that there is no hope of recovery by Lithotomie, he ſhould not attempt it.

The conſtitution of the Patient is to be conſidered.

As concerning the ſick man, it is firſt before the Operation to be carefully inquired, whether he be a fit ſubject upon whom the Operation may be made? for if there be a great ſtone found in an Infant (as it often happeneth) it is manifeſt to be concluded that it cannot be taken away without danger of death; becauſe they are too weake and impotent to endure that great torment, which attendeth this Operation; whence *Corneiius Celſus* and ſome of the Ancients would not have children cut of the ſtone before they were nine yeares of age; yet experience teſtifieth, that many, of fewer yeares have happily indured the Operation, and been cured; eſpecially the ſtone being of a ſmall ſize.

The ſame reaſon holdeth alſo in old men; for though the Dimenſion of their bodies may ſeeme to have ſome proportion with the bigneſſe of the ſtone; Yet it is to be conſidered that their bodies are dryer and more withered than the bodies of young people, & that therefore their skinne, muſcles, veines and the like, cannot ſo eaſily be extended and dilated as in the younger ſort, which have a hot and moyſt temperament. Nevertheleſſe I have ſeene this practiſe to have ſped happily in old men; but

hen indeed the stones were not very great.

In the yeare 1610 *Iacobus Iohannes Mirck* he most experienced Lithotomist of Ulme, in ay presence, and in the presence of many o-her famous men, drew out two stones (one whereof weighed 3xiij.) from the valiant nd Noble Lord *Zacharias Geizcofter* Lord in *Geilenbach* and *Hausheim*, Knight and Coun-ellor to his Imperiall Majestie, and the said Lord recovered his former health, lived many eares after the Operation, and did good ser-ice by his sage counsell to the Roman Em-ire.

In the yeare 1598, the 28 of July, at *Viva-ium*, neere the lake of *Lemane*, I my selfe took Stone from the Noble Matron *Urbana Hu-onin*, (a woman of forty yeares of ge) bigger than an Henns egge, who was ecovered, and lived in health, ruling her chil-dren, and governing her family untill the eare 1611, and felt no paine of the stone un-till her dying day.

Secondly the tempetament of the sick man ought to be carefully observed also; for if the Patient be growne weake by the vehemencie nd continuance of paine, so that the internall owells, as the Lungs, Liver, Kidnyes, &c. e in part weakened and putrified, then this Operation is not to be appointed; for both cost nd labour is lost, and the sick person will dye y the Symptomes which immediately en-ue it.

And here againe it is needfull that the Chyrurgian adviſe with ſome skilfull Phyſitian, to whom the conſtitution of the inward bowels is better known. But if any weakneſſe happen alone through the vehemencie of the paine, without any corruption of the inward bowels, the Phyſitian ſhall aſſiſt him before the worke; which is to be done by gentle purgations, Cliſters, good diet and Cordials.

In the yeare 1598 when I had refuſed to draw out the ſtone from the ſaid Lady *Hugenin* at *Vivatium*, becauſe of her great want of ſtrength, and had injoyned her good diet, purged the body, and had preſcribed her ſome Cordials, as well outward, as inward, within few weeks (becauſe her bowels were ſound) ſhe was ſo recovered (as I ſaid;) the 28 of July I tooke a great ſtone out of her bladder, by *Lithotomie*, as you may ſee in the firſt of my Obſervations.

CHAP. IX.

By what meanes the body of the ſick man is to be prepared by diet, purging, bleeding, bathing for the Operation.

WHen the ſtone is once diſcovered and detected, and that either the ſick man himſelfe or (in his nonage) his Kinſmen, and friends have concluded to have it taken

taken away, the Chyrurgian being called to undertake the worke (for it becomes not an honeſt man to thruſt himſelfe upon this or the like difficult works, like Quackſalvers and Mountebanks) he ſhall not then immediatly apply the Knife to his ſick Patient, and deale with him as the Butcher doth with a Mutton, and tie him to a forme. No ſurely; an other courſe muſt be taken: for if thou wouldeſt performe the worke rightly, and have a cleare conſcience before God, the body of the ſick man is to be prepared, and made fit thereunto, by fit diet, purging, bleeding and the like, before the act of Lithotomie.

And here againe, every Artiſt muſt have an eſpeciall care, to conſult with ſome skilfull Phyſitian, who can diſcover the nature of the Patient, and the conſtitution of his inward bowels: or if this cannot be, let him firſt preſcribe, and injoyne his Patient a good diet, eſpecially for meat, and drinke, that he may obſerve it, ſome dayes before the Operation. *His diet.*

And in the firſt place, let him avoid all things that be Coſtive, and of hard concoction, as are all ſorts of ſalt and ſmoaked fleſh, fiſh, veniſon, cheeſe, and the like.

And againe, as well in the time of the cure, as afterwards, he ſhall beware al things which are ſalted immoderately, or ſeaſoned with ſpices, eſpecially of Pepper, Ginger, Cloves, Radiſh, Onions, and all things that bite the tounge and have any acrimonie; yet he may

uſe Cinnamome, Saffron, Mace, and Nutmeggs, as ſhall be convenient.

Thirdly all ſlimie things are to be avoyded: as the Heads, Feet, and Bowells of living Creatures; as alſo Milk, Cheeſe, and Fiſh living in muddy waters, and others of that kinde are hurtfull to the ſick man.

Let him therefore feede upon freſh Beefe, and Mutton, Chickens, Pigeons, all ſorts of Birds (except water-foule) eggs, freſh Butter, Barly, Water-gruell, the broth of fiſh, and the like.

Let him refraine wine, and all extraordinarie heating drinks, and inſtead of ordinarie drinks, let him uſe the common Ptiſan, or this decoction following.

℞. *Agrimon. Veronic. an. m.* ß. *Liquirit.* ℥. ß. *Incidantur & decoquantur in* ℔. *iij. aquæ fontan. ut remaneant* ℔. *ij. quæ ebullientes in* * *Cantharum infundantur, addendo Cinamom.* ℥*vj. Sacch.* ℥*j* ß. *Cantharus ſubito ac probè obturetur, ut nihil exhalet.* Then let the decoction coole of it ſelfe, and the ſick man drinke thereof at his pleaſure.

* The Authors word is Cantharus, but I conceive a glaſſe, or glazed Earthen veſſel better.

The milke of ſweet Almonds is wonderfully helpfull for him; eſpecially if to two parts of Almonds, a third part of the ſeeds of Cucumbers and Melons be added, and all transfuſed through a Linnen cloath with the water in which a cruſt of bread hath beene boyled, with ſome addition of Sugar.

He muſt alſo eſchue the unruly paſſions of his

his mind, especially anger, sadnesse, and the like; observe a moderation for the times of sleeping, and waking, have a temperate warme aire in Winter, & in Sommer often sprinkle his Chamber with cold water, and strew it with cooling hearbs and flowers, that the hot distemper of the aire may be somewhat abated.

Next, his body must be purged before the Operation, but with gentle medicines, such as shall not provoke too violent stooles, lest a new humour should by chance be brought downe to the Urinary passages, and there augment his passion. *Purging*

For Infants *Syrup. rosat. solut.* or *de Cichor. cum Rhabarb.* will be enough.

But if the Patient be grown up, then a little of the *Electuary de succo rosat.* may be added and mingled with some *Endive water*: For those of ripe yeares, this following potion is convenient.

℞ *Rad. Cichor.*
Lapat. acut.
Polypod. an. ℥ j.
Liquirit. mundat. ℥ ii.
Herb. Scabios.
Agrimon.
Veronic. an. m. ß.
flor. 3. *Cordial, an. p. j.*
sem. Anis. ℥ ii.
fol. Senna Alexandrin. mundat. ℥ iij.
Coquantur in aqua, ut colatura redeat ad lb. *j. in qua infundantur, & macerentur per noctem* *Syrupus Magistralis.*

Rhabarb. elect. ℥ ij.
Agaric. recent. trochiscat.
Turbith gummos. an. ℥ j.

Post sufficientem macerationem, & ebullitionem unam aut alteram, exprimantur fortiter, & cum ℥ iij. *Syrupi rosat. solut. comp. nec non* ℥ v j. *Saccch. miscellanei. f. Syrupus Magistralis.*

Halfe an ounce of this Syrrup is to be given to an Infant who is to be cut for the Rupture or Stone, and ℥ j. to one of more growth, and the dose may be encreased according to the age. It may be mingled with the water of *Endive*, *Ptisan*, or the prescribed decoction of *Agrimony*.

But beeause this kind of sick men, by reason of the great and continuall foregoing paine, are full of many grosse humors, one single purge is not enough, but more are to be administred, untill they be sufficiently purged, and so the cure will thrive the better, and the symptomes cause lesse molestation.

Bleeding

The body being sufficiently purged with the foresaid medicines, as the age, strength of the Patient, fulnesse of blood, and other circumstances doe agree, a veine is to be opened, and blood to be let: and that is done commonly on the right arme in respect of the Liver; unlesse perhaps the sick man have some disease on his left side, or by the advise of the Physitian a veine is to be opened on the left side.

And

And if any accuſtomed egeſtion be ſtopped in the ſick perſon, as the Hemorrhoides, or the Monthly Termes of Women, then after the purgation of the body, they are the firſt to be procured, before phlebotomy is to be uſed.

Some [a] Artiſts doe ſtill maintaine this dangerous abuſe and cuſtome, to adminiſter to the ſick perſon three dayes before the inciſion, a ſtrong Diuretick potion, both in the morning and evening, to thruſt the ſtone to the bladder; but what inconvenience may the Patient ſuffer hereby, amongſt other abuſes, ſhall bee ſhewed hereafter in *Cap.* 23.

[a] Hildanus his word is Caſtratores, which he uſeth to diſgrace Mountebanks; yet I have here candidly thus tranſlated.

Fourthly the belly is to be ſoftned, and made looſe and ſlippery before the Inciſion, by regular and ſufficient purgations, that in the Operation (as it muſt needs often happen) when a great Stone is to be drawne through a little hole, the membrane and Muſcle of the bladder may be dilated, ſtretched, and opened, with leſſe danger. For a [b] Bath, let him uſe the things following.

The belly to be ſoftned.

[b] The word is Semicupium, which I take for a bathing tubbe.

℞. *Rad. Althea,*
Malv. an. ℥ *ij.*
fol. Althea,
Malv.
Violar.
Parietar.
flor. Chamomill.
Meliot. an. m. j.
Sem. Aniſ.
Melilot.
Aneth:

Aneth.
Lini.
Fœnugræc. an. ℥ j.

Incidantur & contundantur omnia groſſo modo, coquanturq; pro Semicupio.

Let the ſick man be put into this Bath, three or foure dayes before the Operation, in the evening, two houres after ſupper, that from the warme Bath he may goe to his warme bed, and there take reſt. As often as he goeth from the Bath, and hath reſted halfe an houre or longer, lett all his belly be annoynted with this following Unguent.

An Unguent to looſen the belly.

℞. *Ol. Amygd. dulc. recent.*
Lilior. alb.
Scorpion. an. ℥ j.
Pinguedinis Capon.
Anſeris, an. ℥ ß.
Unguenti Dialthææ, ℥ ij.
Miſce. f. Linimentum.

But if the ſick man take no pleaſure in the Bath, or any impediment prevent it, then take a ſufficient quantity of the foreſaid hearbs, put them into a Bagge, boyle them in water, and apply them to his Perinæum, or ſeame of the Coddes, but in that proportion that they may alſo cover all the parts thereabouts.

CHAP.

CHAP. X.

What time of the yeare, and age of the ſick man are moſt fit for Lithotomie, wherein alſo is treated of ſome other preparations neceſſarily preceding this Operation.

IT is not enough to have cleanſed and purged the body of the ſick perſon, but in this dangerous work, the time of the yeare muſt as much as may be reſpected.

The Winter being cold, is by conſequent an enemy to the nerves, and hurtfull to all the parts that be of a nervous kind; for becauſe that extremity of cold doth conſtipate our bodyes, and contract all things, the Winter-ſeaſon cannot but be dangerous for this Operation. The Winter.

The extreme heat of Summer (eſpecially the Dog-dayes) is alike dangerous, becauſe it heates the internall bowels in the body of man, inflameth the blood, increaſeth Choler, diſperſeth and conſumeth the Naturall heat, and Radicall moyſture, and ſo cauſeth many dangerous ſymptomes; and therefore this worke of difficultie is not to be then commenced, as may be proved out of *Hyppocrates*. *Lib.* 4. *Aphoriſm.* 5. The Summer.

The Spring, as being temperate, is the moſt ſafe of all the times of the yeare, as *Hippocrates* witneſſeth; The Spring.

witneſſeth, *Lib.* 3. *Aphoriſm.* 91. It makes our bodies plyant and fit for this Operation, and is (as *Celſus* and others teſtifie) the beſt and moſt convenient ſeaſon for this difficult and dangerous worke, and thitherwards a carefull Phyſitian will principally aime, eſpecially if the worke may be delayed without danger.

The Autumne.

The Autumne, though therein the inconſtancie of the weather doth cauſe divers diſeaſes, and dangerous ſymptomes, yet by reaſon of his moiſt temperament, is more fit for Lithotomie than Summer which offends in extremity of heat, or Winter which doth the like by extremity of cold.

How the contrary qualities of the aire are to be corrected.

But, if neceſſitie enforce a worke of this nature to be commenced in an unſeaſonable and contrarie diſpoſition of the weather, then the contrary qualities of the aire are (as much as may be) to be corrected, and amended.

In Winter therefore and in Autumne, let the ſick man be placed in a warme Chamber, and let the forenamed emollient Baggs, and the Bath, be ſomewhat longer uſed before the Operation. In Summer (as I my ſelfe have often done in this and the like difficult Operations, which could not be deferred) let the ſick mans Chamber be towards the Weſt, often ſprinckled and ſtrewed with cooling waters, and leafes, as of Sallow, Oake, Plantaine, Roſes and the like.

The age alſo of the ſick man is to be regarded;

ded; & thence the sageſt ancients forbade thoſe ſorts of Operations to be appointed for Infants and decrepid old men; for Infants by reaſon of their weakneſſe, and becauſe without danger of death they cannot indure the extreme paine and fluxe of blood which doth commonly attend this dangerous Inciſion; and in old men this cutting is extremely perilous, not onely becauſe all men in their declining time grow weake and feeble, but alſo becauſe their native heat, and radicall moyſture is wanting in them, and thence their bodyes doe ſo wither and drie up, that their skin, Muſcles, Veines and Nerves cannot ſufficiently be ſtretched and dilated for putting in the Inſtruments, and bringing out the ſtone; yea in the Inciſion of elder people, it often happeneth that the Veines, Muſcles, and Nerves are torne in peeces, becauſe their bowels are dryed up. Beſides, the Phyſitian ought to conſider, that as the radicall humour and naturall heat is wanting in old men, ſo alſo the cold preternaturall, excrementitious and phlegmatick humors tranſcend the bounds of Nature, whence nothing can be expected but ill aboading ſymptomes of all ſorts.

To conclude, the Chyrurgian ought to be furniſhed plentifully with all ſorts of Inſtruments made of the beſt iron; for it hath often happened that in the Operation ſome of them hath been broken, and the ſplinters thereof been left in the bladder of the Patient; as once

The Chyrurgian muſt have ſtore of Inſtruments.

I knew a Chyrurgian, who being to cut off a mans thigh, his Sawe (being of too hard a temper) broke in peeces to his disgrace and shame, and great dammage of the Patient.

Vide librum Autoris de Gangræna & Sphacelo.

Instruments of divers kinds (as I have said) are required, as Catheters, Probes, the Itinerarium, Conducter, the Specula, Pincers, Smal-hooks, and the like, which the Chyrurgian ought to have of all sizes, great, little, and of a middle sort, that according to the greatnesse and smalnesse of the stone and the constitution of the Patient, they may be used severally. Let not him thinke to stop two gappes with one bush; nor that he can have time to get Instruments when he is imployed upon the Operation. The Reader may find this multitude and variety of Instruments, in the Works of the most learned and experienced men, *Marianus Sanctus Barolitanus, Ambrosius Parens, Petrus Francus, & Ioh. Andreas della Croce.*

I have devised and invented a peculiar instrument for this use, which he that liketh it, may have made for him, set downe in the 18 Chapter. It hath a double use; for it serves not only to open the bladder, and be as a prospective for discovery, but it also takes hold of the Stone and supplies the place of the Pincers.

The Chyrurgian ought always to be furnished with some approved medicine to stay the blood. This that followeth may be useful for him, in this and the like dangerous worke,

which

which I have transferred hither for his uſe out of my *Tractate de Gangrenâ & Sphacelo.*

℞. *Farin. Volatilis* ℥ v j.
Sanguinis Dracon.
Boli armeni,
Terræ ſigillat. an. ℥ ß.
Gypſi, ℥ ß.
Ranarum Aquatil. præp. ℥ ij.
Muſci Cranii humani ℥ j.
Pilorum leporis minutiſſimè inciſ. ℥ ß.
Pulv. Albuminis ovorum ſole Canicular. exſiccat. ℥ j.
Spumæ maris,
Spongiæ novæ torrefact. an. ℥ ß.
Miſce. f. Pulvis tenuiſſimus, qui ſervetur ad uſum.

A Powder to ſtop the flux of blood.

Beſides the powder to ſtop blood, the Chyrurgian ought alſo to be furniſhed with rowers of all ſorts, ſponges, Cordiall waters, and the like, of which more ſhall be ſpoken in the following Chapter.

When therefore the body of the ſick perſon hath been prepared by diet, purging and bleeding, and all things elſe required for Lithotomie be in readineſſe, he is not to be cut immediately or the day following his purging or bleeding, but to ſtay a day or two, that ſo his ſtrength which hath been ſomewhat abated by purging and bleeding, may be reſtored and repaired, and himſelfe in the meane time is to be refreſhed with meates of good juyce; nature by all meanes is to be ſtrengthned, and the

When the Patient is to be cut of the Stone.

the application and uſe of thoſe emollient Baggs (of which we have ſpoken Chapter 9.) is to be continued.

Laſtly, when the time for Inciſion is come, and the Patient hath had a Stoole that morning, either naturally, or by the help of ſome gentle Clyſter, hath made water, ſupped off ſome warme broth, a reare egge, or the like, and drunke a ſmall draught after it, the help and aſſiſtance of Almighty God, is firſt to be ſeriouſly, and devoutly implored, by a lawfull Miniſter (if any be preſent,) or in his abſence by ſome of the by-ſtanders, who, if he pleaſe, may uſe one of the prayers prefixed before my Treatiſe *de Gangræna & Sphacelo.* The ſick man then after halfe an houres ſtay in the Bath, to looſen his belly, is to be taken out, dried with warme cloathes, and bound to the table or forme, yet with this order, that he ſhall walke a turne or two, and (if he be able) make a jump; or if it be an Infant, let ſome of the kindred hold it under the Arme-pits and ſhake it; that the Stone may fall downwards to the neck of the bladder.

Then after prayer to God, let the worke be commenced in the manner, which ſhall be afterwards declared. But the Patient is to be bound with ſpeciall Art and dexterity, as it appeareth in the next Chapter.

CHAP.

CHAP. XI.

How the sick man is to be layed, and Bound.

THat the stone may be cut out, and the worke done without paine and danger to the Patient, his posture and binding are of no small consequence. Let him be then so placed, that the light and Sun-shine may help thee, and direct thy hands. Then, let him bee carefully bound, that his body may not be moved; for otherwise, he may easily be hurt, and offended with the Pincers, and Instruments sticking in his Bladder, and thy selfe be perplexed with trouble, labour, care, and anxiety.

To avoid this inconvenience, and that the Patient may not move or wagge under the Chirurgians hand, he is to be layed and bound upon a firme and fast Table.

Some would (and I my selfe have done it) have the Patient sit upright, that the stone might with more facilitie fall into the Neck of the Bladder: But this posture may usher in many dangers, as shall be shewed afterwards in the XX Chapter.

Let him therefore be so layed and bound, that the lower part of his Belly, and Loins, may hang and decline somewhat downwards, that the Stone may more easily slip to the neck

of the bladder; but let the Abdomen, Thorax, & Head lie upward, and bind not the Thorax, but let it lie at libertie. Let so many strong men be imployed in attendance as may be able to hold the Patient quiet in case of necessitie, especially about the Armes, Arme-holes and thighes, but let not the Thorax, or Breast be touched, or pressed, lest the spirits and breath be thereby stopped.

Let a Linnen cloth or double sheet, be layed under his Buttocks, and a ful-stuffed and well crammed pillow, or two, be placed under his Loines and head, that he may rest upon them more stedfastly.

Some lay the Patient upon a great bagge stuffed with straw, or chaffe; which course I dislike not, because the sick man doth settle thereupon more firmely than on a pillow.

These things thus done, let the Chirurgian bend his Patients thighs as much as may be towards his belly and buttocks: then let him have in readinesse, a long, strong, linnen rowler, foure thumbs breadth rowled in at both ends (such as are used in the Fractures of the scull) yet so as both the ends may jumpe meet in the middle. Thus then shalt thou order the Ligature. Cause an attendant to hold one end of the Rowler fast, in the hinder part of the Patients neck, and then goe thy selfe with the other end, over the Patients left Arme-hole, and under the left Arme, towards the right Hippe, and over the fore-part of the thigh whence

Of the ligature, or binding the Patient.

whence thou ſhalt carry it below the knee, and thence bring it againe towards the externall part of the thigh, and there caſt it twice about the thigh, and thence bring it under the ſoale of the foot, and thence againe above the thigh, and thence under the knee, and thence againe upwards towards the Loins. Then goe up with it towards the left Arme-hole, that ſo thou mayſt bring it from under the left Arme, to the Neck; where thou ſhalt deliver that end of the rowler, with which thou haſt bound the right thigh, to be held by the attendant, and taking the end which he held hitherto, thou ſhalt bring it over the right arme-pit, firſt forward, and then backward under the Armes towards the left thigh, that both ends of the rowler may meet croſſe-ways upon the back, whence thou ſhalt carry it above the hip and thigh downwards to the knee, and above the ſhinnes, thigh, and under the ſoale of the foot, and thence againe to the Hippe, and over the Loins to the right Arme-hole, after the forme uſed on the left ſide, that both the ends of the rowler may be knit together upon the neck, where thou ſhalt faſten them with a knot. And thus the Patient will be ſtraightly and ſurely bound. Nevertheleſſe, that he may not move in the time of Operation, you may ſet two ſtout and ſtrong men on each ſide of him; two whereof may hold him by the knees, and feet, and two by the Arme-holes, and hands; but the Thorax, as I have often ſaid, is not to

be straitned. The hands are sometimes also tyed to the knees, with a particular rowler, or the knees by themselves, by the help of a pulley fastned into the Table, as it appeareth by the adjoyned figure, which for the young practitioners sake, and such as have not been much versed in Lithotomie, I have set downe in the end of this Chapter, as I borrowed it, from the experienced and famous man, *Ambrosius Pareus*.

The Operation being finished, and the sick mans hands loosed, the knot on the neck is to be untyed also, but the rowler it selfe to be cut asunder with sciſſars, that it may be presently undone, and taken away without trouble.

Women may be laid, and bound also after the same manner; yet I have met with some, which in this and the like painfull Operations, have refused the Ligature. Amongst the rest, Anno 1598. June the eighth, at *Vsiacum* upon the *Genever* sea, I tooke a great Stone from a Noble Matron, by name *Vrbana Prous*, Widow to the honorable Lord, *Daniel Hugenius* of blessed memory; But when I was about to bind her, she demanded what I thought of her, and whether I imagined that she was afraid: alledging that she had brought forth many children, and endured greater torment by the stone it selfe than the Operation could produce: yet never needed the Ligature. I placed her therefore in a Midwifes hollow stoole, and because the stone it selfe did shew

the place for inciſion to be in the neck of the Matrix: ſitting upon a low ſeat at her feet, I made the Inciſion, and did all the worke under her cloathes, and brought out the Stone, to the admiration of the by-ſtanders; for though there were many both men, and women preſent, yet neither any of them, nor I my ſelfe could perceive her naked body.

This woman during the whole time of Operation, was ſo undaunted, that ſhe neither wagged nor cryed out, and in a ſhort time, by Gods ſpeciall aſſiſtance, recovered her former health, which continued from the yeare 1598 till 1611. There is mention of this Woman alſo. *Cent.* 1. *Obſ.* 68. *& cap.* 22. of this book. Beſides, there is ſurviving to this yeare 1627. an Honourable, Pious, and vertuous Lady, *Iaquilina Meſtral, Dn. à Vandans*, &c. who can witneſſe this memorable Operation.

Anno 1625 May 12. here at *Berne*, I happily cut off a great Steatoma with the membrane from the joynt of the right Arme-hole, of the well known Matron the Lady *Maria Spirer*, wife to the valiant Lord *Ludovicus of Diesbach*. This woman deſerveth to be enrowled in the liſt of brave ſpirits; for ſhe would neither be bound, nor held: And though the inciſion was painefull, by reaſon the Wenne was ſo neere the joynt, and grown to the ſenſible membranes, yet ſhe neither ſqueaked, nor much moved her body, but endured the torment conſtantly, with great patience, and in

a ſhort ſpace, by the bleſſing of God, was happily recovered. Yet I hence conclude not, that the Chirurgian herein ſhould follow my way, and not bind his Patients, in theſe painfull Operations; for the iſſue in many doth not anſwer their deſire: nevertheleſſe if he can perfect the worke without the Ligature, (as I have done many, the Patient not being bound) it will be done more adviſedly; for many are ſo affrighted with the Ligature, that they fall into moſt dangerous ſymptomes, before the Buſineſſe.

Examples of the effects of feare.

I doubt not, but that fearefull Lipothymie which hapned, when that Noble Gentleman *Balthaſar a Diesbach* (who is remembred againe in the twentyeth Chapter) had his Arme cut off, proceeded moſt from feare, cauſed by the Ligature; becauſe when the Cure was done, I could underſtand ſome ſuch thing from him.

In the yeare 1608, when in the Royall Caſtle of Bourg in Breſſe, a Garriſon-ſouldier being taken a ſleep the ſecond time upon his watch, and as to be ſhot to death, was bound, and hoodwinked, the Sonne of the Noble Lord *Peter de Boiſſe*, Baron of Bardalian, &c. Conſtable, and Keeper of the Caſtle for the Chriſtian King *Henry the Great*, came, and upon his knees humbly begged his life, becauſe he dearely loved him: The Governor thereupon commanded to have him unbound, and certified, that the Governor induced by the mediation of his little Sonne had granted his life; But when

they had unbound him, he was found as in the conflict betwixt life and death, senseleſſe and giving up the ghoſt: So that he was forced to be carryed out of the Caſtle into the Cittie, where the Learned *Ianus de Burgo* a Doctor of Phyſick, by command of the foreſaid Noble Lord *de Boiſſe*, aſſiſted him with his Counſell, and in the end recovered him.

This ſtory was told me more largely by my ſpeciall good friend *D. de Burgo* in the yeare 1609, when I was called to a Patient in that Cittie: but hence it appeareth how dangerous a paſſion Feare is.



CHAP. XII.

How the Chyrurgian ought to Carry and behave himselfe in the time of Incision.

HItherto it hath been briefly shewed, how both the Patient and Physitian ought to prepare and order themselves for Lithotomie, and in what manner the sick person is to be layed and bound. It now remaineth that we should

should declare how the Chyrurgian should order the work and carry himselfe in the execution thereof; wherein these ensueing clauses are to be observed carefully.

First, no honest and religious Lithotomist will be so Audacious, and head-strong as to beginne the worke with little *Preparation*, as some Foole-hardy men doe, because of those many symptomes, which will follow it, as shall be declared in the next Chapter, but rather order it, according as he shall be guided by the [a] Itinerarium. Rules for Incision.

Secondly, the Incision is not to be made in the seame falling from the Scrotum to the Fundament, called by the Anatomists Taurus; for a wound in that place is scarse curable, there being but small store of flesh, and Fistulaes and other uncurable diseases following it, almost unevitably; besides that, the Orifice can hardly be enlarged in the Operation through the hardnesse of that Commissure. Let it therefore be appointed right against the future, and distant thence about two fingers breadth neere the Fundament towards the left Hippe.

Thirdly, the Chyrurgian must not think to proportionate the Incision after the bignesse of the stone; for though the stone exceed not the greatnesse of an Hasell-nut or Beane; yet the Cut must be so large that the Instrument mya be put in, and the stone taken hold off: but contrariwise, if the stone be a great one, and the Lithotomist should attempt to make a large orifice,

[a] An Instrument whose forme, and use is shewed chap. 14.

orifice, according to the quantity thereof, the muſcle and veines of the Bladder muſt needs be cut aſunder, and the Patient caſt headlong into danger of death. The wound therefore ought to be of a middle ſize; & if the ſtone be found to be a great one, the Orifice muſt be enlarged, with the Speculum and Pincers, that the Stone may be taken out; and by this kind of dilatation, the veines and muſcle of the bladder cannot be ſo ſoone hurt, as by Inciſion; and the ſtretched membranes, veynes and the like, are againe far better contracted after the Operation, and diſpoſed for a perfect Cure, than if they had bin cut aſunder.

Fourthly, throughout the whole Operation, both in the time of Inciſion, putting in the Inſtruments, and drawing out the ſtone, an eſpeciall Care muſt be taken, that the muſcle of the bladder be not diſſected, nor torne by the ſtone; for if this ſhould happen, the diſeaſed man would hardly be cured, or retaine his water; but as it runnes into the Bladder, it would iſſue out againe. The Chyrurgian ought alſo to annoint his Inſtruments, and the finger which he puts into the Fundament, with oyle of ſweet Almonds.

Fifthly, the ſtone (if it be poſſible) is to be drawne out whole, and not to be broken in the bladder: becauſe it is not alwayes knowne what manner of ſtone is contained therein.

I have ſeene ſome, and have by me one or two as hard as Flint; and beſides that, theſe

manner

manner of Stones cannot be broken without great violence and extreme torment of the Patient: there is danger alſo, leſt the bladder, at leaſt the Muſcle and Neck thereof be torne and exulcerated by the ſharp angles of the ſtone. For though ſome be found which are rough, ſharp and uneven; yet they cannot doe ſo much hurt, as the points of theſe extreme hard ſtones, which are ſometimes as ſharp as the edge of a knife or razor. The Lithotomiſts doe ſometimes meet with ſtones, which have burſt aſunder like Pumicks, and could not be taken out whole; and in this caſe the breaking of the ſtone is dangerleſſe; yet the Bladder is to be carefully cleanſed with a ſpoone, the remainder of the ſand and fragments to be taken away, and the wound to be the longer kept open with Tents, as ſhall afterwards be ſhewed at large.

But if the ſtone, becauſe of its bigneſſe, cannot be brought out whole, then (neceſſitie having no law) all manner of Inſtruments are to be provided (which nevertheleſſe are to be uſed with judgement) and the paine, as much as can be, to be mitigated; for often by a great and unapprehenſible torment (the unſeparable companion of this Operation) the Patient dyeth by fainting; and ſometimes, the ſtone being very great, the veines are broken aſunder, and thence the diſeaſed man is taken with ſuch a flux of blood, that he fainteth under the Phyſitians hands, or dyeth preſently after the Operation.

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There

There are not wanting ſome raſh Operators, ignorant of Anatomy, who think it fabulous that ſuch veines ſhould be inſerted into the Perineum, that by the breach of them, ſo large and dangerous an Hæmorrhagia ſhould be cauſed; but let them weigh theſe following examples.

At *Friburg* in *Swaben* 1623, at a merry meeting, when the youths and men of the towne had warmed their bloods with dancing, one of them attempting to leape over an high ſtoole, fell ſhort, and the corner thereof ſo hurt his Perineum, that within few days he bleed ſome pounds of blood by the yard (for the skin was not broken) which was in part ſo coagulated and congealed, that it may be admired how it could iſſue that way; and therefore when my ſelfe, and the learned and experienced *Franciſcus Proſper Gottrow*, the Profeſſor of *Friburg*, were called unto him, we had much adoe to recover him, his ſtrength was ſo decayed by the vehement Hæmorrhagie.

The like happened about the ſame time here at *Berne*, to a Noble Infant of foure yeares old; for it falling from a Forme upon a cudgell, was wounded about the extremity of the Honteuſe toward the Anus, and ſuch a violent flux of blood followed, that it is almoſt incredible that ſo much blood ſhould be in a child.

Theſe examples I have here inſerted, that they may be a leſſon to all Chyrurgians, and thoſe

those especially which goe to worke with small preparation. Therefore, when the stone because of its greatnesse, cannot be taken away without danger of death, I doe persuade againe and againe, that the Operation be not appointed; for this is better and more commendable, in a faithfull and diligent Chyrurgian, than (as some usually doe) to draw the languishing Patients as it were to the shambles.

Sixthly. Nor is it to be omitted that as there are diverse symptomes attending this disease, so the Physitian ought to be furnished with many servants and attendants, that all things may be done orderly, and nothing wanting in time of necessitie.

First therefore, though the sick be sufficiently bound, yet some hearty men which can hold him, are to be imployed, that he may not wagge in the Operation, and impeach the Physitian in his worke.

It so befell me once at *Paterniacum*, when I was about to cut off the thigh of a man of forty yeares of age, and ready to use the saw, and Cauteries. For the sick man no sooner began to roare out, but all ranne away, except only my eldest Sonne, who was then but little, and to whom I had committed the holding of his thigh, for forme only; and but that my wife then great with child, came running out of the next chamber, and clapt hold of the Patients Thorax, both he and my selfe had been in extreme danger.

Let

Let another ſervant ſtand at his right hand, with a large diſh wherein all the Inſtruments are placed orderly, leſt he ſhould riſe from his ſeat, during the worke, and this or that toole be to be fetched, and brought. In the ſame platter amongſt other things, let there be placed ſome oyle of ſweet Almonds in a ſawcer, that he may annoint his Inſtruments and fingers therewith, as oft as occaſion ſhall require: and becauſe cold is baneſull to the bladder, and the Inſtruments muſt therefore be warme, and coales cannot miniſter ſuch an heate as is here required, therefore the Chyrurgian ſhall have ſet to his hand a baſon full of water tempered to his purpoſe, and therein as need is, warme his Inſtruments, and afterwards annoint them with oyle of ſweet Almonds.

Another diſh is alſo to be delivered to the ſame Attendant, wherein all things to be uſed after the Operation, are to be layed orderly; that when the ſtone is taken away, all neceſſaries to ſtanch the blood, and for other uſes, may be in a readineſſe.

And becauſe through the extremitie of paine, and the loſſe of blood, great weakneſſe and faintings often enſue, therefore ſome one of his friends aſſiſtant, is oft to miniſter unto him one ſpoonfull of this Cordiall water, to refreſh him.

℞ *Aq. ſummitat. & flor. Borrag. Bugloſſ. Roſar. Odorif. an.* ℥ i j. *Cinamom. diſtill. ſine vino.* *Syr. de ſucco Citr. Papaver. errat. an.* ℥ j. ß. *Specier. de gemmis, Latificant. Galen. an.* ℈ i j. *Confect. Alkerm.* ℥ j. *Miſce. f. Potio.*

A Cordial water.

This Cordiall water ſtrengthneth, and refreſheth the vitall ſpirits, and aſſwageth paine.

This following Epithema is alſo not to be omitted.

An Epithema.

℞. *Aq. Meliſſ. Bugloſſ. Roſar. an.* ℥ j. ß. *Cinamom. ſine Vino deſtill. Acet. roſac. an.* ℥ j. *Specier. Diamargarit. frig. Diambr. an.* ℈ i j. *Campher.* ℈ j. *Croci,* ℈ ß. *Miſce. f. Epithema.*

In this Epithema, or Cordiall medicine, not only before the Inciſion, ſome thick linnen clouts are to be dipped, and applyed to the pulſe of both hands; but alſo a peece of ſcarlet as bigge as the palme of the hand, is to be wetted therein, and applyed warme to the region of the heart.

But in the time of the Inciſion, let ſome of the Attendants, or by-ſtanders waſh the ſick mans Noſtrills and Temples with the ſame medicine,

medicine, and wet the clothes applyed to his hands.

CHAP. XIII.

Of ſundry ſorts of Operations, and ſeverall methods in cutting out the Stone; and firſt of that Inciſion which is done with little preparation.

HAving ſhewed in the former Chapters how the Chyrurgian ſhould behave himſelfe both before, and during the time of the Inciſion: I ſhould now proceed further, and declare what he ſhould principally provide for, after the Stone is drawne out. But becauſe there are ſeverall manners of Operation uſed both by the Antients, and Neotericks in their practiſe of Lithotomie; for the Learners, and young Chyrurgians ſake, I have been willing to inſert ſome of them in this place, that every man may thence make choyce of that method which he ſhall thinke to be ſafeſt and moſt convenient.

The firſt, and moſt uſuall Operation, or way of drawing out the Stone, practiſed by the Lithotomiſts at this day, is thus: The Patient being bound (as is fitting) the Chirurgian putteth the firſt, or middle-finger of his left hand, into his fundament, and with his right hand thruſteth downe the lower belly towards the Bladder;

Bladder; or some attendant, appointed to that office, may thrust it downe, but not with his bare hand, but lined with some fine doubled soft linnen or towe: because the belly being compressed by the bare hand, it often happeneth, that the Muscles are hurt, and bruised, whence paine, tumours, inflammations, and other dangerous symptomes doe ensue, to the great annoyance of the Patient. The Chirurgian having found the Stone by his finger in the fundament, thrusts it downe to the very neck of the bladder, and there first maketh Incision upon the stone, and then with his fingers thrust into the fundament, laboureth to drive it out: and this doth speed well in some people, where the stone is but small: but if it happen otherwise, they finish the work with those little Hooks, delineated in the end of the Book; and this course they call *Apparatus minor; or the operation with little preparation.* *A caution.*

But how dangerous a course this is, every wise man may easily judge, when he shall consider, that the Chirurgian may by an easie mistake dissect the parts adjoyning to the neck of the Bladder, or the neck it selfe, and sometimes too the very muscle of the Bladder; Whence first, because of the multitude of veines meeting in that place (as hath been shewed in the former Chapter) a great and dangerous Fluxe of blood is to bee expected; and secondly it may bee feared, that the sick man will not afterwards be able to hold his

water, or a Fistula may reside in the part affected.

Besides, it hath also been observed, that in this kind of Operation, the Bladder it selfe, because it being emptied falleth together, and the straight gut have been so cut, and mangled, that as *Peter Franke* witnesseth, the Chirurgian hath hurt his owne finger with the knife, and then the urine hath passed through the straight gut, and the ordure through the wound: and what inconvenience this might bring upon the Patient, and disgrace upon the Lithotomist, each man may conjecture.

Pierre Franc. l. des Hernies. c. 32.

It is also notably observable in this way of Operation, that if it happen that the Chirurgian should by chance pierce the parts in the Incision, and hurt his finger in the Fundament, how should hee then performe the worke? Must not he needs in regard of his owne paine, cease from his labour, and leave the worke unfinished? Though therefore, this kind of Operation and manner of taking out the stone hath been used by some of the ancients, as appeareth by their books; yet I would advise every good Chirurgian to consider of this course more seriously, and not to follow them herein. The ancients indeed first brake the ice and prepared the way of arts for posterity, and in that did them good service: but because *Hippocrates* concludes *lib.* 1. *Aphoris.* 1. The art is long, and the life of man

short,

short, they could not polish many things; and are therefore not to be discommended, but honored as the Instruments of the great Physitian. But they who at this day know better, and surer wayes of operation, and yet nevertheless refuse to practise them, these sure are but giddy-headed and such conditioned men which wanting conscience have no respect to their Patients.

CHAP. XIV.

Wherein another manner of Operation is described, to wit by the Itinerarium.

THere is another operation or way of cutting out the Stone, upon an Instrument called the Itinerarium. The instrument is properly so called, because it sheweth the Chirurgian the way to find the exact place of the Incision. But let it be made of a thin silver plate or lattin. See its forme at the end of the book.

The Patient being well bound, and all things fitly disposed, put in the Itinerarium through the Yard into the Bladder; then make the Incision with the knife, whose point must be sharp on both sides a fingers breadth from the seame that goeth from the Scrotum unto the fundament toward the thigh unto the very Itinerarium; then thrust in the Conductor or Semispeculum, upon the Itinerarium

unto the very ſtone ; afterwards take out the Itinerarium, that the Yard may againe bee free.

The foreſaid Conductor, is an hollow inſtrument, and open on one ſide, as ſhall appeare at the end of the Book: it is bigge in the end, and therefore muſt be thruſt deeply in, that it may open the wound and the neck of the bladder : this done, the Hamulus, an inſtrument knowne and uſed by Lithotomiſts, is to be thruſt in by the open ſide of the Conductor, and the Conductor it ſelfe to be drawne out, and then the ſtone to be brought downe by two of the fingers of the left hand, to wit, the firſt and middle finger being put into the fundament, to be caught by the Hamulus, and ſo drawn out.

Beſides, let one of the Attendants cruſh down the belly with his hand toward the upper part of the *Os pubis*, that the ſtone may the better fall downe upon the neck of the Bladder ; yet let him not doe it with his bare hand, leſt hee bruiſe the muſcles of the Abdomen, whence inflammations, and other ſymptomes may ariſe; but let his hand be lined with a double cloth, or fine towe.

Some Lithotomiſts refuſe the foreſaid Conductor or Semiſpeculum, as ſuperfluous, and only by the help of the Itinerarium carry the Hamulus to the Stone. I will not gainſay them ; yet the Conductor hath this uſe, that it ſo dilateth the orifice and neck of the bladder, that

that ſo the Hamulus may bee put in more eaſily.

To the ſame purpoſe ſome thruſt in an Inſtrument called Speculum Veſicæ; and then the ſtone is brought by the fingers in the fundament, unto the orifice, and thence caught by the Hamuli: which courſe of practiſe not deſpicable, I my ſelfe have uſed happily; but then the Inciſion muſt be of a midle ſize; for if it be ſmall, the inſtruments will not eaſily enter, and if you make it great, then perhaps you may hurt and cut many veines, yea the muſcle or the very bladder it ſelfe.

CHAP. XV.

Of the third way of drawing out the ſtone.

But if the Stone bee ſo great, that it cannot bee drawn out with the Hamuli, and greater force bee required; then the buſineſſe is to bee ordered in the manner following. Inciſion being made upon the Itinerarium, as is ſaid, and the Conductor or Semiſpeculum being put in, and the orifice being inlarged in ſome ſort by them, the Pincers are to be thruſt in by the Conductor unto the ſtone; the Conductor being then drawne out, the ſtone is to be carefully found out, and to bee held faſt by the Pincers; and when you have well and with a ſtrong hand

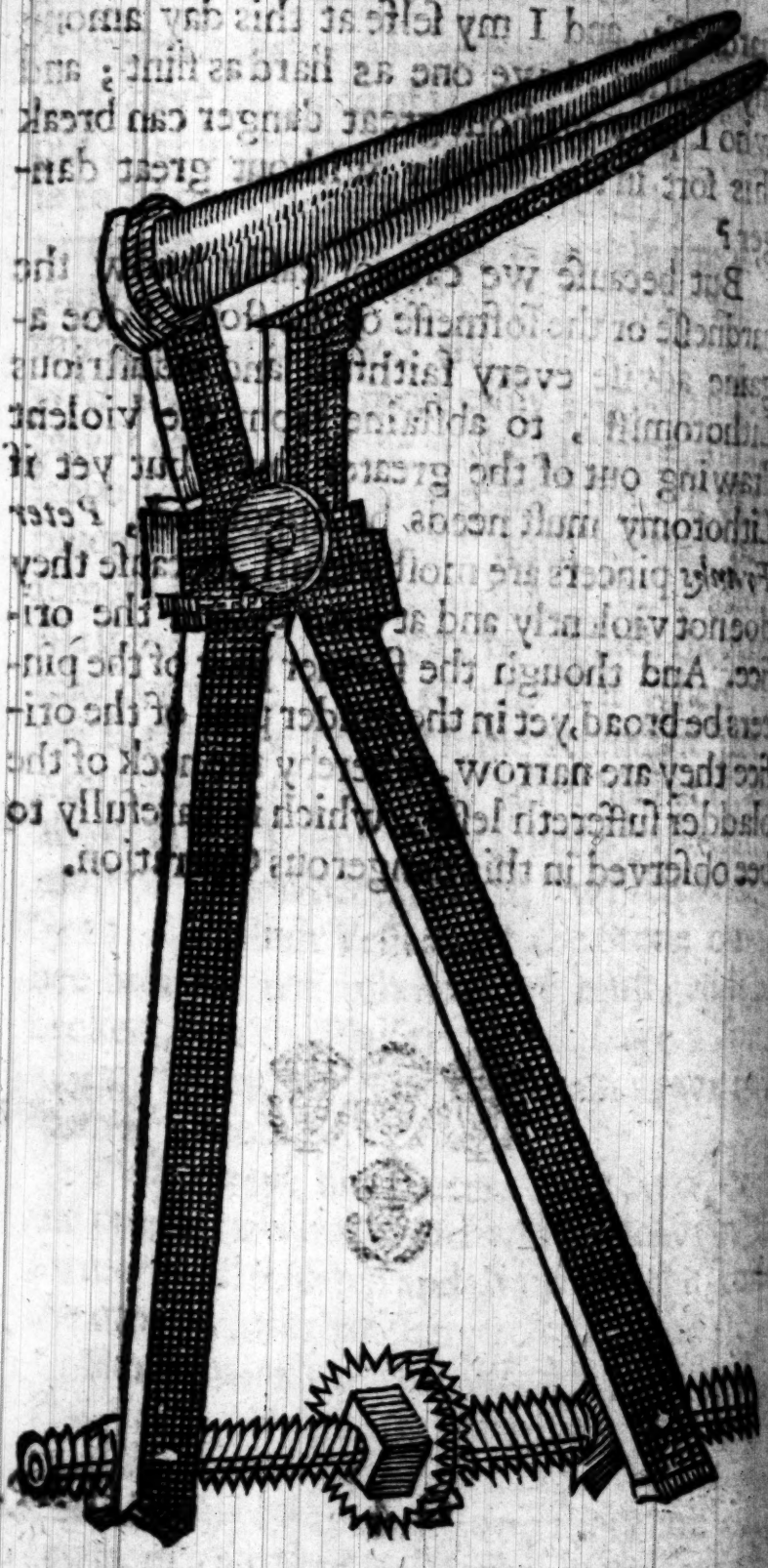
brought the pincers together, and are sure that they have fast hold of the stone, then draw it out; Yet in the time of the extraction (which is to be done with both the hands) you must turne and winde the Pincers gently, this way and that way, that the orifice may be something inlarged, and the pincers come out with the stone the more easily; which if happily it cannot be done at the first time, and the stone (as it often happeneth) slip out of the pincers, then you must with another paire somewhat broader and stronger, take hold of the stone; their capacity being such that they may compasse it out round. But when you put in the pincers, let some attendant presse downe the belly strongly with his hand, as is above said. To enter the pincers, the orifice must be somewhat enlarged, which is done by the Speculum Vesicæ. If the Stone cannot bee brought out whole, but must needs bee broken, then the Physitian must have a speciall care to deale discreetly therein, as we have formerly declared.

Peter Frank his pincers be of two kinds, the one somewhat broad and hollow in the former part, to catch and draw out the stone, the other somewhat sharp to break the stone.

Here againe I will advise the Chirurgian that hee doe not rashly attempt to break the stone, because of the great danger that attends that kind of Operation; for there are often found in the bladder stones of an extreme hard-

hardneſſe, and I my ſelfe at this day among my rarities, have one as hard as flint; and who I pray without great danger can break this ſort in the bladder without great danger?

But becauſe we cannot eaſily know the hardneſſe or the ſoftneſſe of the ſtone, I doe againe adviſe every faithfull and induſtrious Lithotomiſt, to abſtaine from the violent drawing out of the greater ſort: but yet if Lithotomy muſt needs be appointed, *Peter Franks* pincers are moſt uſefull, becauſe they doe not violently and at once extend the orifice. And though the former part of the pincers be broad, yet in the hinder part of the orifice they are narrow, whereby the neck of the bladder ſuffereth leſſe, which is carefully to bee obſerved in this dangerous Operation.



CHAP. XVI.

Of the fourth manner of Operation used in cutting out the Stone, which may justly bee called Lithotomia Franconiana.

BEcause I doe often in this Book mention that excellent and experienced man *Peter Frank*, I cannot omit to insert that manner of Operation first invented by him, which is thus set down in the XXXIII Chapter of his Book. The Body of the Patient (as hath been said) being prepared for the work, and incision made upon the Itinerarium, he applieth a fit tent to the wound and attempteth no more at the present about extracting the stone, unlesse perhaps it appeare of its owne accord, in the orifice, and then he draweth it out with the pincers fit for his purpose, or the Mamuli, which are most usefull in this case, especially if the Stone be smooth, and even: but if the stone fall not of it selfe unto the Orifice, or be of a larger size, then he binds up the wound after his usuall way, and letteth the Patient rest. Some few dayes after when the state of the Patient is somewhat amended, the wound suppurated, no feaver appearing, and the Stone sheweth it selfe in the Orifice (as it oft happeneth, and the said Author affirmeth he found by experience) then he draweth

draweth it out in the manner aforeſaid. But if the Stone fall not of it ſelfe to the Orifice, his adviſe is, that it ſhould be forced downe by the fingers thruſt into the fundament, and compreſſure of the Muſcles in the Abdomen, as hath been ſhewed formerly; becauſe the tumours are then abated, the Urine hath had a free paſſage, and there is no feare of Inflammation in the wound afterwards. The Stone being thus brought downe to the Orifice, he draweth it out with his Pincers, or Hamuli, as hath been formerly declared. But if the Stone be ſo great, that it cannot bee drawne out through the neck of the Bladder, unleſſe the Bladder it ſelfe bee diſſected, (which is very dangerous, as ſoone after cauſing Inflammations, or other grievous Symptomes, yea death it ſelfe to enſue; beſides that ſuch wound cannot be cicatrized) he adviſeth that the bladder be not diſſected without the neck where the fat and muſcles doe appeare: but rather that the Chirurgian ſhould breake it with the Pincers by him deſcribed (which indeed are fit for that uſe if they be ſharpe and ſtrong) yet not at once, but with reiterated courſes, and eſpeciall care being had of the Patient, one part of the Stone being broke to day, and the reſt a day or two afterwards, and ſome Anodyna to ſuppreſſe inflammations applyed in the Interim: wherein it is diligently to be obſerved, that all things be applyed hot; And ſo it is better, faith he

to pluck it out by peece-meales, than that the ſick man ſhould be oppreſſed with extremity of torment; the leaſt of two evils being alwayes to be choſen.

I find no Author, ſaith *Frank* further, who hath uſed this way of Lithotomie, and it ſeemeth a wonder unto many, that after Inciſion is made, the ſick man ſhould not be touched for five or ſix dayes more, or leſſe, and then the extraction of the ſtone ſhould be attempted; yet many learned, and experienced men, having heard my reaſons, and arguments, have ſubſcribed to my opinion. And experience it ſelfe hath ſhewed mee, ſaith he, that the Patient after one ſtone hath been drawne out, hath been ſo weakned, that I durſt then attempt no further, or ſeach whether there were any more, leſt he ſhould dye under my hands, or ſoone after.

After I had looſed him, while I ſtood by him till hee had recovered his ſtrength, I oft obſerved that the Stone which remained in the bladder, fell out without any enforcing. And this doth chiefly happen, when the ſtone remaining is leſſe than that which was drawn out.

Sometimes alſo the ſtone of it ſelfe, hath ſo fallen unto the Orifice, that it might eaſily be diſcerned: but becauſe the Orifice was leſſe in the Superficies, and outmoſt skinne, than within the Neck of the Bladder, as otherwiſe it ought to have been, therefore it ſtuck

ſo

so there, that part of it appeared without the Orifice, and part remained in the Neck of the Bladder. Besides, when the Stone which is behind in the Bladder, is bigger than that which was taken out, then the Stone remaining hath fallen to the neck of the bladder and the Orifice, and tormented the Patient as bad as the other which hath been taken out, that is, the sick Person hath been vexed with the like paines as formerly.

Such Stones as are smooth, commonly fall of themselves to the Neck of the Bladder, and to the Orifice; others not so easily, and sometimes not at all.

But if the Stone appeare not in the Neck of the Bladder and the Orifice, it may easily be forced downe by the Chyrurgian thrusting his fingers into the Fundament, and pressing the Muscles of the Abdomen, as hath been oft declared; All which presse is without danger.

I have oft bin perswaded that no stones have remained after the Operation; though within few dayes I have found the contrary, because the Patient hath felt his antient paines, and other signes of the maladie; which being discovered, for my credits sake I have been forced to draw out the remainders after the like manner.

But after that I had observed, and found by experience, that I might doe it this way, farre more easily, and with lesser paine, and danger

to

to the Patient, than at the firſt Inciſion, I was induced to uſe this way of Lithotomie, to wit, not to draw out the ſtone at once, unleſſe it appeare of it ſelfe, but to ſuſpend the operation, and diſmiſſe the Patient for ſome few dayes, till he hath recovered ſtrength. Thus farre *Peter Frank*, whereby it appeares that he was an honeſt and diſcreet Lithotomiſt.

The ſame teſtimony his familiars alſo, whereof ſome were ſurviving at Lauſanna *Anno* 1586 when I came thither, gave of him. It is to bee wiſhed, that all Lithotomiſts and Rupture-Cutters would uſe this method; for I believe that many who by being Cut get their death, might thus eſcape it. For becauſe the Lithotomiſt doth conclude either that the Patient ſhall be Cured, or dye at the firſt bout, it often happeneth, that at the firſt Inciſion, he either looſeth ſo much blood, or is ſo tormented, that through the unſufferable paine, Inflammation, or other dangerous Symptomes ſpeedily enſueing, he either dyeth under the Operators hand, or ſoone after. All which might be prevented, if they would uſe this preſcribed Courſe, as may appeare by this example.

Suppoſe one to be wounded by a Bow, or Gun-ſhot, and the Arrow or Bullet to ſtick faſt in the wound; will not the Chyrurgian ſeeing an immenſe flux of blood, endeavour firſt to ſtop it, and ſome few dayes after, when the Hæmorrhagia is paſt danger, look after the Bullet,

Bullet, or Arrow? The same reason holds also in Lithotomie which is oft attended with such a losse of blood, that thereby the Patient is precipitated into extreme danger of death; and such sownings follow it, that unlesse the wound bee instantly bound up, and hee have rest given him, he may dye suddenly.

CHAP. XVII.

The fifth manner of Operation, which is ascribed to Peter Frank also.

THe said *Peter Frank* in the XXXIII Chapter of his Book, reports and writes, that once there was brought unto him a child of two yeares age, which was troubled with a Stone in the Bladder about the bignesse of a Pullets egge. But when he had in vaine used all his industrie to thrust it downeward into the neck of the Bladder, and the child was so tormented with the Stone, that his parents rather desired to have him dead, than to live any longer in such misery; and himselfe thought it a shame, and construed it in the worst sense when it was told him that he could not bring away the Stone; in the end he resolved to dissect the Inguen about the upper part of the *Os pubis*, and there to finish the Operation. When therefore he knew that the Stone could not be forced down to the Neck of the Bladder,

der, with his fingers put into the Fundament he lifted it upward, whilſt one of the attendants compreſſed the childs belly on the contrary ſide, and thruſt the Stone to the place deſigned for diſſection, & ſo the child though very weak, was recovered, and the wound healed.

From theſe words, a certaine famous and learned man would conclude, that the Stone is to be exſected in that place, and that it may be done with leſſer danger; and ſo hee ſtiles his courſe with the title of *Lithotomia Franconiana*; though *Franck* did not preſcribe it to be followed, but confeſſeth that hee dealt boliſhly; and, not without good reaſon, adviſeth that no man ſhould imitate him therein: for though it appeare by experience, that the wounds of the Bladder are ſometimes healed, as I could prove by many examples, having my ſelfe cured ſome; yet it is rare; and the Aphoriſme given by *Hippoc. l. 6. Aph.* 18. is certaine, *The wounds of the bladder are mortall.*

As one ſwallow doth not make a ſummer, ſo it is in this caſe; though one wound be perhaps ſometimes cured, yet on the contrary ten others, or more, are deſperate; not only becauſe the Fleſh or Parenchyma of the Bladder doth not eaſily heale, but alſo becauſe the Bladder is of a Nervous matter, almoſt bloodleſſe, and therefore the wounds thereof doe hardly and ſeldome cicatrize; eſpecially by reaſon

reason of the grievous and dangerous Symptomes, such as are vehement paine, Heat and an Internall Inflammation, Tumors, the Crampe, and the like which attend them. It is also to be noted, that the Urine cannot always passe through the wound, but is collected in the lowest cavitie of the Belly, where it putrifieth, and so inflameth, and corrupteth the parts adjoyning.

Besides this, another and no despicable difficultie accreweth by this Incision: to wit that it cannot bee attempted but on infants, (and *Peter Frank* instanceth in one of two yeares old;) And if you demand the reason, why not upon such as be of ripe yeares? I answer, because the fingers are not long enough to lift up the Stone so high as the Inguina. And this (good Reader) I could easily make appeare unto thee in my study where I have severall Sceleta of halfe, a whole yeare, and three and thirty yeares of age. And therefore with the forenamed *Frank* I would dissuade every honest and industrious Chyrurgian, from attempting this Operation.

CHAP.

CHAP. XVIII.

What the Lithotomist should doe after the extraction of the Stone, and before the binding up of the Wound.

HItherto, it hath been shewed how the Lithotomist ought to behave himselfe, both before and in the Operation. But the Stone, by Gods assistance, being taken away, the Patient is not presently to be bound up, and layd in his bed; for it often happeneth, that two, or more stones, may be contained in the Bladder. I my selfe in the yeare 1610, having found two in a man of note in *Swaben*, foure in another at *Collen*, all of a good bignesse. *Kembertus Dodonæus*, Physitian to his Imperiall Majestie *Rodolph II*, mentioneth it: and *Jo. Schenkius Observ. lib. 3. cap. de calculo vesic.* reporteth that 32 were found, inclosed in severall pannicles. If a man therefore, after the extraction of a single Stone, shall conclude all danger to be past, and yet another or more, or some fragments should remaine in the Bladder, then the Operation would be dangerous, painefull, vaine and the last misery would prove worse than the first. The excellently learned *Paulus Lentulus*, ordinary Physitian of this Republick, of happy memory, told me, that he was present when

an experienced Lithotomist drew a Stone from a child of fifteen yeares, Sonne to the Noble *Peter Chambrier* Vicar of both the Counties of Newstat, and Valenbourge, in whose bladder (as it was then said, and the event shewed) another stone remained, which by degrees so encreased, that it caused no small Symptomes, and so stopped the Neck of the Bladder, that the Urine could not be voyded, but by the help of an Instrument, and the Cannula. But after that he had passed some yeares in misery and torment, having in vaine taken many Medicines prescribed him by Physitians, Apothecaries and others in the end he dyed in his Fathers house, by the Lake of Newstat.

The famous *Ioh. Iacob Kraffius*, ordinary Physitian to the Citty of Newstat, my wifes father, lately told me what was found in the corps after his decease, saying that he was desired by the father of the deceased, to dissect his body, to find out the cause of so great and long continuing paines and Symptomes, and that he found a great stone in the Bladder, and one of his Kidneyes rotten, and wasted.

Novemb. 20. 1626. The Noble Gentleman, *Franciscus Ludovicus* of *Erlach*, the younger Lord of *Spiez*, shewed me the least of those stones, which was almost round as a Bullet, ash-coloured, hard and smooth, weighing 3iij. which Stone hee had from the Noble Matron *Elizab. Chambriere*, sister to the deceased,

ceased, who also reported that her brother lived in great misery for some yeares after the Operation, and the Orifice never cicatrized.

To avoid this pernicious mischiefe, presently upon the extraction of the stone, diligent search ought againe to bee made with the Probe, before described, to know whether there be any more Stones remaining, and if any be found there, the Physitian ought to be carefull that they may be taken out, one after another, and nothing remaine in the Bladder. What is to be done after the extraction of the stone.

The bladder being cleared of the greater stones, one of the *Cochlearia* is to be thrust in, that if perhaps any gravell, sand, or coagulated blood remaine behind, if time, and occasion serve, it may be taken away: for if the Patient should loose much blood, or as it oft happeneth, be weak and fainting, then (though some Lithotomists make light of this case, and usually goe on boldly in their first intention) the Patient is to be delayd no longer, but presently to be conveyed into his bed, that they may prevent him from sowning, as shall bee shewed in the next Chapter. For the greatest stones being taken away, it is not necessary in such danger, as attends a Lipothymia, to detaine the Patient longer, because Nature, if the Orifice be kept open, will thereby drive all out, and cleanse the bladder. And though any great stones should remaine be-

hind yet Nature would so drive them to the Orifice, that they may more conveniently bee drawne out by the Instruments and Pincers, as afterwards I shall shew (God willing) where I write of the Lithotomie of women.

For the Portraiture of the Cochlearia, see at the end of the book.

CHAP. XIX.

Of the Lipothymie, and how to help it.

I should now of Course, proceed to the first binding up of the Orifice, and shew how it was to be rowled up, and the Patient layd in his bed. But because the *Animi deliquia* or Sownings are the most grievous, and dangerous Symptomes which follow this Operation: therfore before I goe further, I thought fit to treate of them briefly, the Cure whereof I shall annexe hereunto.

The causes of sownings.

The Causes of this Symptome are many, but in this, and the like difficult Operations, it ariseth either from extreme paine, dissipating and consuming the strength and the vitall spirits, or the dissection, or breaking of the veines, whence an Hæmorrhagia or flux of blood insueth. Sometimes also the Patient by excesse of meate, or drink before the Incision, falleth into a grievous Lipothymie

as it happened at *Paderborne*, *May* 31. 1609. When I was to cut off a womans thigh, about 40 yeares old, neere the knee, who though she was lusty & of strength, whilst I was stopping the flux of blood, & busie about disposing the maimed part, fell into such a Lipothymie, that every one thought her to bee dead; My wife who was present at the Operation, while I was binding up the trunke of her thigh, gave her one moytie of the following Cordiall Potion, and after layed her in her bed; but then she fell into such a vomiting, that she filled a whole Bason with raw and undigested meat: yet she recovered happily, and survived many yeares; some dayes after the Operation, when I reproved her for gluttony, as a thing directly opposite to my intentions, she answered me, that she thought she was to bid all meates Adieu, and therefore at the last would glut herselfe therewith. The Cordiall drink was this.

℞. *Confect. Alkerm.* ℈ ij.
Aq. Cinnamom. distill. sine Vino, ℥ j.
Calendulæ,
Bugloss. an. ℥ ß.
Misce.

Hence it appeares, that such Lithotomists crosse the rules of Art, as suffer their Patients, either in the evening or morning before the Operation, to fill their paunches with wine; for hereby they fall into these grievous symptomes and infirmities. Doubtlesse, unlesse this

this gluttonous woman had vomited, she had died with her full maw. For nature being weakned by the Operation, cannot digest and concoct that abundance of meates and drinks; and therefore internall Inflammations, Feavers, and other Symptomes must necessarily ensue.

It is enough therefore for the Patient, before the Operation, whether it be Cutting for the Rupture, or the Stone, &c. he take a little broath, a reare egge, a small draught of wine, and nothing else be administred unto him before the Operation.

By this meanes, wee shall avoyd Lipothymies and other grievous symptomes arising from fulnesse of meate. Yet in the time of Operation, the Patients strength is to be repayred by broath, Cinnamon water, the forenamed Cordiall, and the like, which we have mentioned formerly; and his forehead, nostrills, and pulse to be plyed with the forepreſcribed[a] Epitheme.

[a] See the end of the 12. Chapter.

And because most vehement paine, the inseparable Companion of Lithotomie, doth often cause Sownings, the Chyrurgian ought to prevent it, as much as hee can. Let him therefore endeavour to have a firme hand, and not shaking, that he may doe his worke expeditiously, though it be grievous & painfull. It is requisite also that hee be furnished with all manner of Instruments, and such as be not cumbrous, and unhandsome, but terse and

made artificially, which are to be warmed in hot water, and annointed with oyle of sweet Almonds, as hath beene shewed formerly. Nor is it to bee passed over with silence, that the Patient, as many use, is not to be set in an upright posture, though it helpeth much to bring downe the Stone to the Neck of the Bladder; for this posture doth often cause him to faint; when lying upon his Back, the inward Bowells may better be reposed, the spirits passe more freely, and performe their office, than if he sat upright. Hence it comes to passe, that they who are Cut in their beds, doe not so frequently Lipothymize.

The Patient is not to be set upright.

Some yeares since, here at *Berne* I was to cut off the Arme of a Gentleman, which by reason of the unhappie issue which followed the opening of a veine, did Gangrenate. Haveing placed him in a chayre and bound him, that I might the better fit my selfe for the Operation, the Patient (being much weakned by his former disease) so sownd, that wee thought him even at deaths doore; but the rowlers and ligatures being immediatly cut asunder, & the Patient laid upon his back, he recovered. Yet because the Operation in respect of the Gangrene, could not be longer deferred without danger of death, the learned *Barthol. Dunus* (ordinary Physitian of this famous State, my Colleague and friend) and I, concluded to cut off his Arme the day following, where I so fitted his bed, that hee might

might lie even with his whole body upon his back, and only his Arme being ſtretched out, was conveniently bound; and the Operation ſped ſo happily that hee never ſowned, and is living at this preſent yeare 1627. I cut the fleſh to the bone, with a fire-hot knife; to prevent the flux of blood, and diſſipation of the vitall ſpirits. Hereof the Reader may ſee more in my Book, *De Gangrena, & Sphacelo.*

The flux of blood, is not the leaſt Cauſe of Lipothymies, in this and the like dangerous Operations: which is to be prevented by the Chyrurgian, as much as may bee; nor is the Inciſion to be made [a] ſlightly, but upon the Itinerarium: For thereby, the veines, and muſcles of the Bladder, and ſtraight gut, are ſo conpreſſed by the fingers of the Chyrurgian in the Fundament, that often the Hemorrhoidall veines muſt neceſſarily breake: which misfortune every operator ought to be carefull of, not only in the Inciſion, but alſo in the putting in of his Inſtruments, and drawing out the ſtone.

[a] *Apparatu parvo.*

Object. Here for a Corollary it may bee demanded, what the Chyrurgian ſhould doe, if his Patient ſhould Lipothymize, or any dangerous fluxe of Blood ſhould enſue before hee hath taken out all the ſtones?

Solut. It is anſwered, that the Patient is immediatly to be repoſed, & that he is to uſe all diligence for his refection, & ſtopping of that dangerous Hæmor-

Hæmorrhagia; For it is farre better that the Operation be deferred till the next day, than that the Patient ſhould dye under the Chyrurgians hand, or ſoone after, by an exceſſive loſſe of blood.

That this way and method of drawing out the Stone agreeth with Art, and hath beene practiſed by the moſt famous Chyrurgians, it appeares by *Peter Franck*, a good and Godly man, 70 yeares ſince the ordinary Lithotomiſt of this State of *Berne*, and the Cittie *Lanſanna*, who not only preſcribes that the Patient be put to reſt in caſe of an enſuing fluxe of Blood, and Lipothymie thereupon accrewing, that the Patient be repoſed, comforted, and the Symptomes taken away, and afterward the remaine of the Operation to be finiſhed; but requireth alſo that ſome dayes may bee appointed for the Operation, that the Inciſion being made the firſt day, the Patient may be layd in his bed, and the Stone drawne out ſome dayes after; and all to this end, that his ſtrength may be conſerved, and the mortall Symptomes avoided. I would to God, that all Operators in theſe times were like mindfull and carefull.

CHAP.

CHAP. XX.

How the Patient, is to be bound up, the first and second time, and untill he be perfectly recovered.

AS soone as the Stone and other incumbrances are taken out of the Bladder, the Patient must neither stay to be stitched up, or Bathed, but immediatly be layd in his bed, that so he may recover his strength, as shall be shewed more largely in Chap. 22. Let the Chyrurgian therefore have in readinesse a Tent dipt in the white of an egge, and the powder to stench blood, described Chap. 10. and put it into the Orifice to the very Bladder. Let him annoint his Belly from the Navill downewards, his Loins, Honteuse, and Hipps, with the following oyle a little warmed.

℞. *Ol. Rosar.*
Viol. ana ℥ ij.
Amygd. dulc.
Ovorum.
Butyri recent. ana ℥ j.
Misce ad usum prædictum.

This done, let him imbibe a Boulster of a convenient thicknesse, in the white of an egge, rose and plaintaine waters beaten together, lay it upon the Orifice, and observe all

all things carefully. If the Patient happen to Lipothymize, let him give him againe a ſpoonefull or two of the Cordiall water, renew the Epitheme, apply it to his pulſes for halfe an houres ſpace, and then lay him to his reſt. After, let him adminiſter unto him ſome broath, with a draught of the Emulſion of ſweet Almonds; for wine in this and the like caſes is not to bee uſed, neither within nor without the Body, unleſſe extreme weakneſſe and faintings force us thereunto. And let this ſuffice for the firſt binding up.

The ſecond is to bee ordered thus: when Inciſion hath been made in the morning, and the Patient is not troubled with his urine; towards the evening, the wound is to bee opened againe, leaſt ſome inconvenience or ſymptome ſhould happen in the Bladder by ſuppreſſion of the urine; for the urine cannot paſſe by the Tent, which was dipped in the white of an egge, and ſtrewed over with the powder. The Artiſt then being to open the wound, is to be furniſhed with two ſorts of Medicaments.

Firſt, with a new Tent and Boulſters ordered as before, that if any new Hæmorrhagia ſhould happen, he may have all things ready, and not bee accuſed of improvidence.

This order doe I obſerve in all my Operations the three or foure firſt dayes till I am ſure that the Hæmorrhogia is ſtopped, and I alwayes

alwayes remember what happened to a famous Operator, *Andreas Vitellius* by name, who having Cut a tumor in the thigh of a Count of *Waldeck*, Biſhop of *Oſnabrugge*, being unfurniſhed of Medicines to ſtench blood, and actuall Cauteries, ranne to the Kitchin to ſnatch up ſome hot Iron, but in the Interim the Patient dyed.

Beſides this, the Artiſt ought to have another Medicine in readineſſe, called a digeſtive, which when the Flux of Blood is ſtopped, muſt be applied for the mitigation of paine, and more ſpeedy ſuppuration, and is to be made thus.

A digeſtive.

℞. *Ceræ novæ* ℥ j ſ.
Gummi & lem. pinguiſſ.
Terebinth. clarę ana ℥ j.
Colophon. ℥ ſ.
Ol. Amygd. dulc.
De vitellis ovorum ana ℥ j.

Diſſolvantur igne lentiſſimo & percolentur. Colaturæ admiſce Croci ſubtiliſſimè pulverizati ʒ ij. *Hujus unguenti accipe* ℥ j, *cui admiſce vitellum ovi unius, & Ol. roſar. q. ſ. ut formam acquirat liquidam.*

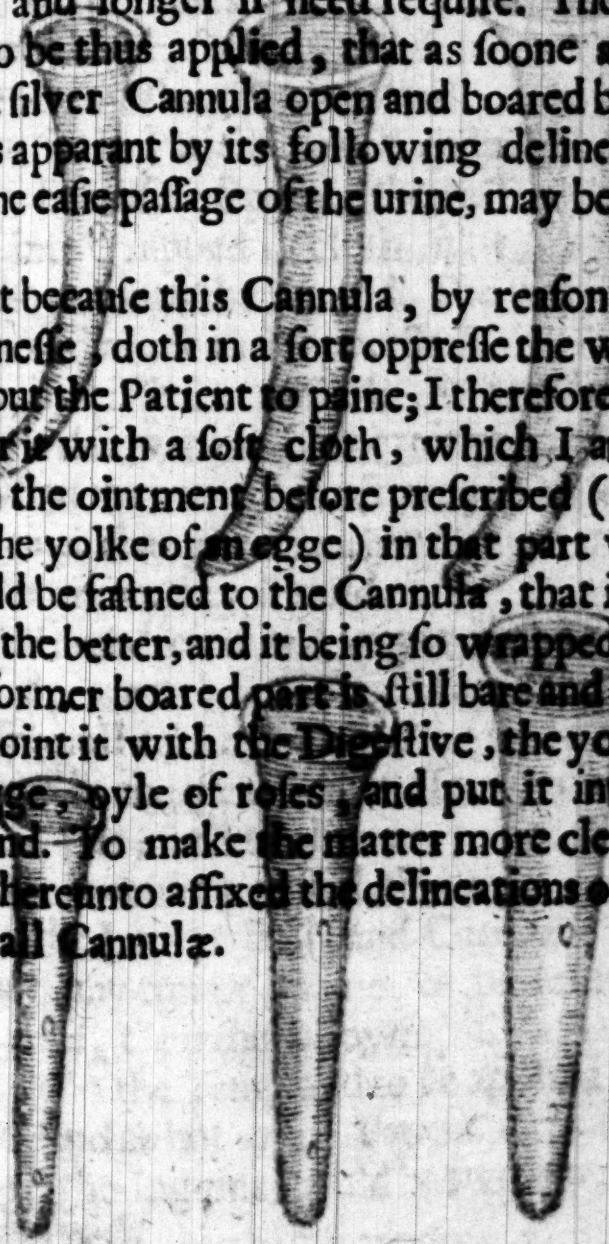
The Tent, and whatſoever elſe is to be put into the wound, is to be annointed with this unguent; and of the reſidue mingled with the yolke of an egge, an emplaſter is to be made, and applied to the Orifice.

Afterward let the Belly, Loins, the privities, and Inguina be annointed with the fore-

prescribed

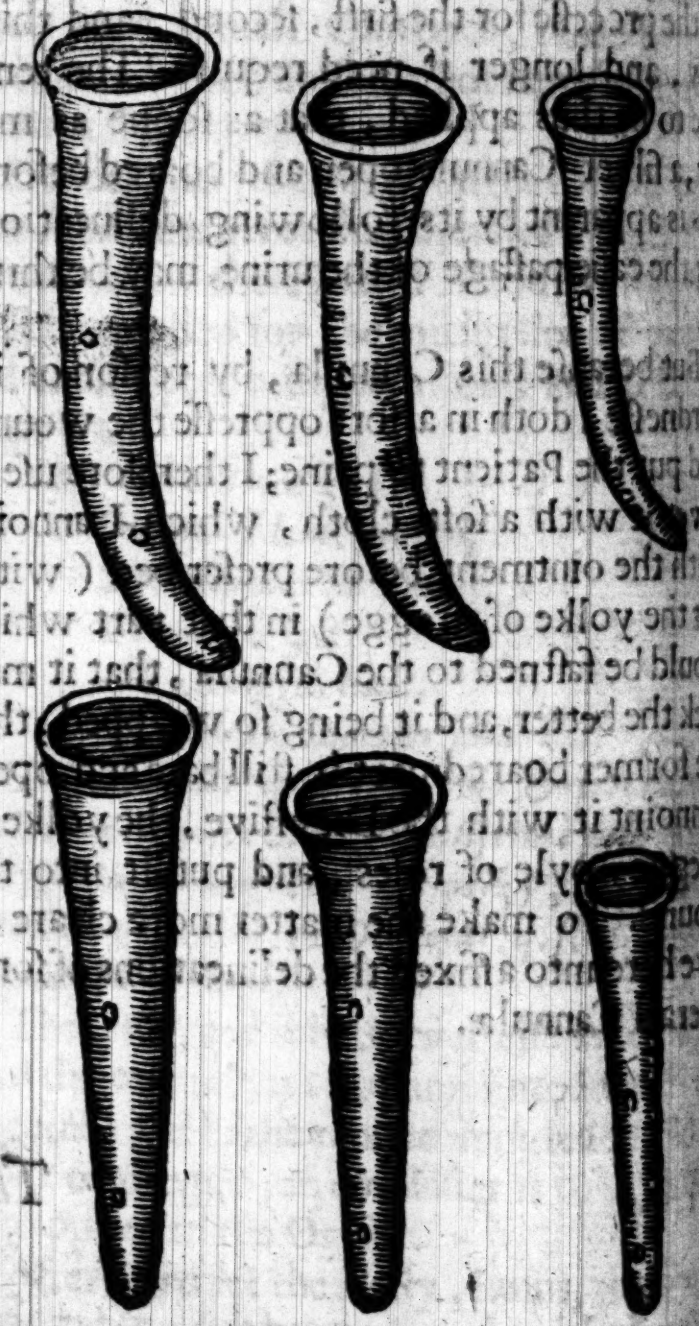
preſcribed oyles, and let a Boulſter moyſtned in the white of an egge beaten in roſe and plaintaine waters, and a little roſe-vineger be applied to the part affected, ſo that they may all ſtick faſt to the ſuffering place; And this is the proceſſe for the firſt, ſecond, and third day, and longer if need require. The tents are to be thus applied, that as ſoone as may be, a ſilver Cannula open and boared before, (as is apparant by its following delineation) for the eaſie paſſage of the urine, may be thruſt in.

But becauſe this Cannula, by reaſon of its hardneſſe, doth in a ſort oppreſſe the wound, and put the Patient to paine; I therefore uſe to cover it with a ſoft cloth, which I annoint with the ointment before preſcribed (without the yolke of an egge) in that part which ſhould be faſtned to the Cannula, that it may ſtick the better, and it being ſo wrapped, that the former boared part is ſtill bare and open, I annoint it with the Digeſtive, the yolke of an egge, oyle of roſes, and put it into the wound. To make the matter more cleare, I have hereunto affixed the delineations of ſome ſeverall Cannulæ.



The

The Canulæ.



Some would have the Cannulæ made of thinne plates of lead beaten with the Hammer, which are more pleaſing, becauſe they may be bended in the wound, and better fit to the Patients poſture.

Diverſe of theſe Cannulæ covered with cloth to the holes (as hath been ſaid) ought to bee at hand, ſome great, ſome ſmall, and ſome of a midling proportion.

But if the Patient cannot endure the Cannulæ, becauſe of paine, then a Tent made of fine Lint, wrapped in cloth, inſtead of them, is to be put into the wound. The wound is to be opened as oft as it oppreſſeth the Patient, yet ſo that if it be poſſible, it bee done but twice a day, viz. in the morning and evening: for when the wound is often opened, and the Medicines changed, neither of them can doe their work as they ſhould.

Theſe medicines, and wayes of opening the wound, are to be continued for ſome dayes, and ſpeciall care to be taken for cleanſing the Bladder in the meane time. To conclude the Urine, Pus, and the like are to bee received into a convenient veſſell that they may not offend the Lower Belly and Coccyx.

But if any tumor, paine, or preternaturall heat ariſe, then the following Cataplaſme is to be upon the Tent, and to be applied to the the wound as hot as the Patient can ſuffer it, though the Inguina ſhould be ſwollen, as oft it happeneth.

℞.

℞. *Farin. Horatei.*
Fabar. ana ℥ iß.
Sem. Fœnug. ℥ ij.
, Cydon. ℥ j.
Pul. ros. rub.
Chamomil.
Melloti ana ℥ iß.
Coquantur in lacte, addendo Butyri, & Ol. amygd. dulc. ana ℥ j. *Vitellos ovorum* ij. *Croci* ℈ j.
Misce, f. Cataplasma.

And the unctions of the Belly, Loins, and the parts before rehearsed, are to bee continued.

The wound then being brought to good digestion, the bruised flesh well recovered, the congealed blood in the parts neere the wound dispersed, and nothing offensive longer remayning in the bladder, the Tents and Cannulæ are no more to be used, but nature is to be holpen for curing and healing the wound. The Chyrurgian may then if he please, apply the *Balsamum Toletanum*, or some other fit and approved one.

I have used the prescribed Unguent of *Elem.* in this and the like bruised wounds, to the last, and happily cured them; because it not onely asswageth the paine hindring the cure and producing many other symptomes; but also cleanseth and mundifieth the part affected.

But if urgent necessitie require a stronger

Medicine

Medicine, as when the wound is very foule by reason of the contusion, or like to putrifie, then this Mundificative may be applied thereunto.

℞. *Aloës Succocitr.* ʒ ij.
Myrrh. ʒ i ß.
Rad. Gentian.
Angelic.
Aristol. rotund. ana ʒ j.
Scordii ℈ iiij.
M. f. omnium pulvis tenuissimus cui admisce Terebinth. ʒ i j. *Mellis rosac. q. s. f. Unguentum.*

But if, as it sometimes happeneth, there appeare a Gangrena or Sphacelus in the Scrotum, the reader may peruse my Book *de Gangrenâ & Sphacelo.*

If through the contusion, and congealed blood any preternaturall heate doe arise, an injection is to be made with a syringe, to extinguish that heat, and to hinder the *Gangrene*, or *Putredo.* for example.

℞. *Rad. Aristol. rot.*
Gentian. ana ʒ ij.
Fol. Plantag.
Rosar.
Scordij.
Rutæ ana p. j.
Parietar. m. ß.
Coq. in Aq. ℔ iiij. *ad tertiæ partis consumptionem; In Col.* ℔ j. *dissolve mellis rosar.* ʒ j.

All impediments which hinder the Cure being in fine taken away, let the thighes of the Patient bee bound above the knee with a Rowler, and be carefull that they lye not too low, when the wound is to be opened. This will serve for a future.

Some Chyrurgians, and Lithotomists doe here no lesse commend, the inward use of Traumaticke and vulneràry potions, than the outward, and account it for a great secret: but because that such as are troubled with the Stone, by reason of the continuance of the fore-going paine, watchings, and want of rest, are for the most part sickly, evilly disposed, and have their bowells obstructed and full of naughty slymie humors, and because experience doth testifie, that these vulnerary Potions are hurtfull in all obstructions of the inward Bowells, as shall be shewed in my Tractate *de Meliceria, & Ichore Celsi*, therefore we may refraine them; especially, being by Gods blessing abundantly supplyed with many other excellent externall remedies, as Balmes, Unguents, Emplasters and the like. Instead hereof, it must be endeavoured by all meanes, both by meates and Medicines that all internall obstructions may bee opened, and Nature (which in all the Cures, both of inward and outward affections, doth minister the best and most sanative Balsame, and vulnerary Potion) bee strengthened. For Nature being weakned and cast downe, no certain

ure can be expected. But how the Patient is o be dieted, and ordered, during the time of he cure, is ſhewed, Cap. 9. & 22.

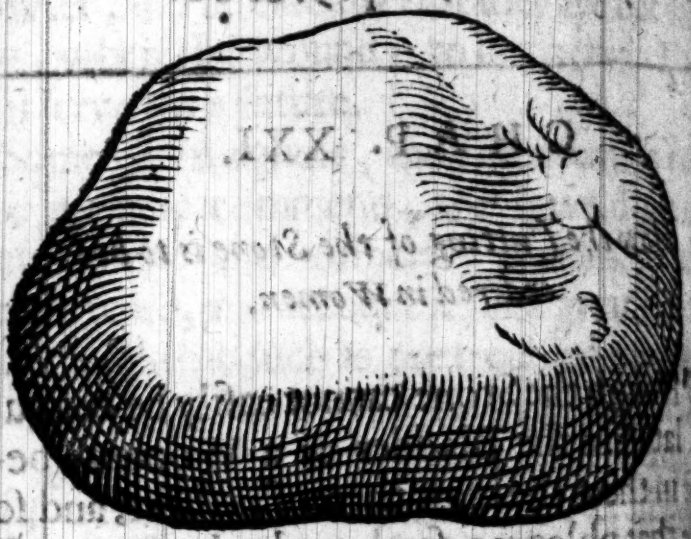
CHAP. XXI.

How the Cutting of the Stone is to bee ordered in Women.

THough the Stone cannot eaſily be coagulated in the Bladder of a Woman, beuſe in them the neck thereof is ſhort, and ſo rge that phlegme, ſand, and whatſoever els y miniſter matter to the generation of the one, may with facilitie be carryed away by ine; yet I have often ſeene Women in hom ſtones of bigneſſe have been found.

In *Viviacum*, a towne on the *Genever* Sea, no 1598. an Honorable and honeſt Matron troubled with a Stone of this bigneſſe, elineated in the next page) of which the ader may ſee *Cent.* 1. *Obſerv.* 68.

The Stone.



Anno 1608. I was called to an hon
Matron, at *Friburg* in *Swaben*, which after
painefull delivery of a dead Conception, fe
an unsupportable paine in her Bladder, a
the Neck of the wombe. I opened the n
of the Uterus with the Speculum for the M
trix, & found in the Bottome thereof a wh
Stone which I had fastned of with my fi
cers; more followed it, resembling bro
pumizes, which were fastened together, i
thick tenacious slyme; within few daye
infinite number of stones were taken from
by the Neck of the Bladder, of which ma
the Reader may peruse *Cent.* 3. *Obser.* 69.

Some yeares since when I was the Or
nary Physitian of *Paderborne*, a Gentle
came unto me, in whom there grew a St
of this shape, and bignesse.



How I handled her, the Reader may see. *Cent. eadem. Obs.* 68.

In the yeare 1622. a Noble and Prime Lady here at *Berne*, being troubled with the Strangurie, retention of the urine, and much paine, sent for the Mid-wifes, who imployed all their Care to deliver her of her burthen of child-breeding: my wife being also called, and applying of Medicines, inwardly and outwardly, a stone of a good bignesse fell out of her Bladder, and shee fell not into travaile till two moneths afterwards. Hence it appeares, how needfull it is that all Midwifes, and such as be imployed about women with child, should be able to distinguish betwixt the strangurie and child-bearing.

An observation of the ignorance of Midwifes.

Whatsoever therefore hath been spoken, and propounded about the preparation of sick men Chap. 11. ought to be understood also of women; and the Chyrurgian must observe the same directions, which are given for men, Chap. 12. in Women also: but principally

pally he must be sure to find out the stone both wayes; that is, by the Finger & the Instrument.

The finding out of the stone in Women is ordered thus: Let the Artist thrust in the Index of his right hand into the Neck of the Mother, by which being turned upwards toward the *Os pubis*, and the Belly pressed downe, by the left hand, he shall feele the hardnesse of the Stone: But in Girles, especially such as are young, this tryall by the Finger cannot be made by the Neck of the Bladder, but it is to be done by the Fundament, as in men. And yet this tryall is no demonstration; for in a womans bladder there are found hard Tumours which suppresse the urine, and produce symptomes like those of the stone; and then the tryall is most safe and certaine by the Instrument, though the Finger may make some shew of the stone.

As cõcerning the work of Lithotomie, there is no small difference; for because the neck of the Bladder in Women is short, & large, Incision is to be seldome made, unles the stone be over-big; yet then necessitie hath no law, as shall be shewed hereafter: otherwise, the neck of the bladder being sometimes so enlarged in men, that stones of great bignes may be drawn from thence, why may not the same be done in women? because the neck of the womans bladder is short, straight, and more large than that of men. And besides, it is also to be observed in the Cutting of women, that it

carse be done without damage to the Sphinter, or Bladder it selfe, and therefore this ast remedie is not to be attempted.

The drawing out of the stone from women, s thus to be ordered by the Chyrurgian. Hee hall prepare, and purge the Body fittingly, by iet, and open a veyne; and then *præparatis reparandis*, emollient Bathes, Bagges, and yles (some dayes before, and the morning receding the Incision) being applyed unto er, shee is to be layd upon a Forme or Table, nd to be bound, *as the occasion requireth.*

And here againe, and againe, I advise the Chyrurgian, that he bind not the Thorax, neither in men nor women, but leave it free, least ethereby hinder their breathing. The Thorax must not bee bound.

It is not without cause, that I adde these words (*as occasion requireth*) because I have met with some women so hearty, and courageous, that they would not admit of any ligature; amongst whom was that Noble and Vertuous Matrone of *Viviacum*, which would neither suffer herselfe to be bound nor held, yet during the Operation, neither changed her countenance, nor moved her body.

Anno 1618. I cut off the breast of a good woman, as I did the thigh of another, some yeares before at *Gravan* upon the *Genever* sea, of whom I may say the same, and by whose examples I may truly testifie, that God Almighty hath shewed a transcendent power in their weaknesse, having so enabled them, that they

they have undergone these hazards more confidently than men, and lesse feared them.

The woman being sited for Incision and bound, let the Chyrurgian thrust in his Probe, or Catheter to the Stone in the Bladder: but this Catheter needs not to be so crooked, or long as for men, but shorter by halfe, and a little thicker, with respect to the Patient.

Upon this Catheter the Conductor or Semispeculum the Chyrurgian may put in to the very Stone; and this done, thrust in the Pincers, which are not to be round before, but a little acuminated, by the hollownesse of the Semi-speculum, and then draw out the Semispeculum, that both hands may be free: afterwards let him put in the Index and middle Finger of his left hand, into the Neck of the Matrix, and bring the Stone to the Pincers, using all diligence to catch it and bring it out. If the designe speed not the first or second time, and the Stone slip out of the Pincers, he must not give it off more in women than men, but plye the Pincers, till hee have fastned upon the Stone and brought it out.

In this case my Instrument called Speculo-Forceps is very usefull for many reasons; for gently by degrees & with lesse paine, it openeth the Neck of the Bladder, and takes hold of the Stone, not in two, but foure several places, so that it can swarve no way, and the Artist may prevent the slipping of it out of the former part of the Instrument by his finger.

Who

When the Attendant then who is to wind up and guide the screw of the Instrument, doth well perceive that it is fastened upon the stone, then the Lithotomist may draw it out gently together with the stone, with his right hand, and both the fingers of his left hand being put into the Neck of the Bladder, or Fundament, may follow the Stone, and so hold it to the Instrument.

The Stone being taken away, as well from women as men, let the Artist search the Bladder, and try whether any fæces be remayning, as wee have directed Chap. 18. and need not here repeate.

The woman is next to be carryed to bed, and her Belly and Loins to be annointed with oyle of Roses, violets, sweet Almonds, and the like before prescribed Medicines. Afterwards, all feare of an Hæmorrhagia being past, it will be convenient to put a long Tent, annointed with the Digestive, into the neck of the Bladder; and sometimes to apply a Pessary made of fine wooll or cotton, dipped in the following water.

℞. *Aq. plantag.*
Rosar. ana ℥ i j.
Melissæ.
Artemis. ana ℥ j.
Sem. Cydon. ℥ j.
Ovum cum Album. & vitello. n. j.

Conquassentur ac misceantur. dein etiam pessario, sicut etiam pulvillo, Aq. illâ madefactis, pudenda

pudenda tota obducantur; reliqua verò ut in viris peragantur.

Let this suffice briefly for those stones, which may be taken out through the neck of the Bladder. How others, like that described in the beginning of this Chapter, which for their vastnesse cannot be brought out that way, are to be handled, I am not a little doubtfull: yet in this case I think that it is good discretion for the Artist to deale with women, as we have directed for men, that is, to commend them to learned Divines, that by their grave and godly exhortations, they may perswade them to a constant patience; and to expert Physitians, that as much as may be, they may asswage their paine; though the Chyrurgian may try if happily hee may break the Stone in the Bladder, and draw it out by peece-meales.

Marianus Sanctus Barolitanus would have an Orifice made neere the neck of the Bladder; *Paræus* and others, would have the Incision made in the middle of the Neck, and the Stone to bee taken out that way; but I much feare this way of Incision, because of the Sphincter, which thus would scarse escape unwounded. I therefore repeate what I said before, since the neck of the Bladder in men which is much narrower than in women, may be so enlarged by the Instrument that the stone may be brought out that way; why may it not be done in women, the neck

of

of whoſe Bladder is more capacious?

But here will ſome reply, wilt thou refuſe this Operation, uſed by thy ſelfe, as appeares *Cent.* 1. *Obſ.* 68? The cauſe gentle Reader is that nature ſhewed me the way and meanes, how the Operation was to be done: For the ſtone by its ſharpe point had ſo corroded the Bladder, and the neck thereof, that it might be caught in the Neck of the matrix, through a little hole with the little finger, and Cathether; and I therefore enlarged the Orifice, with a ſmall crooked knife, that I might the eaſier put in a crooked Pincer; *the ſhape of both which are deſcribed in the Page following.* *Obiect.* *Solut.*

pudenda tota obducantur; reliqua verò ut in viris peragantur.

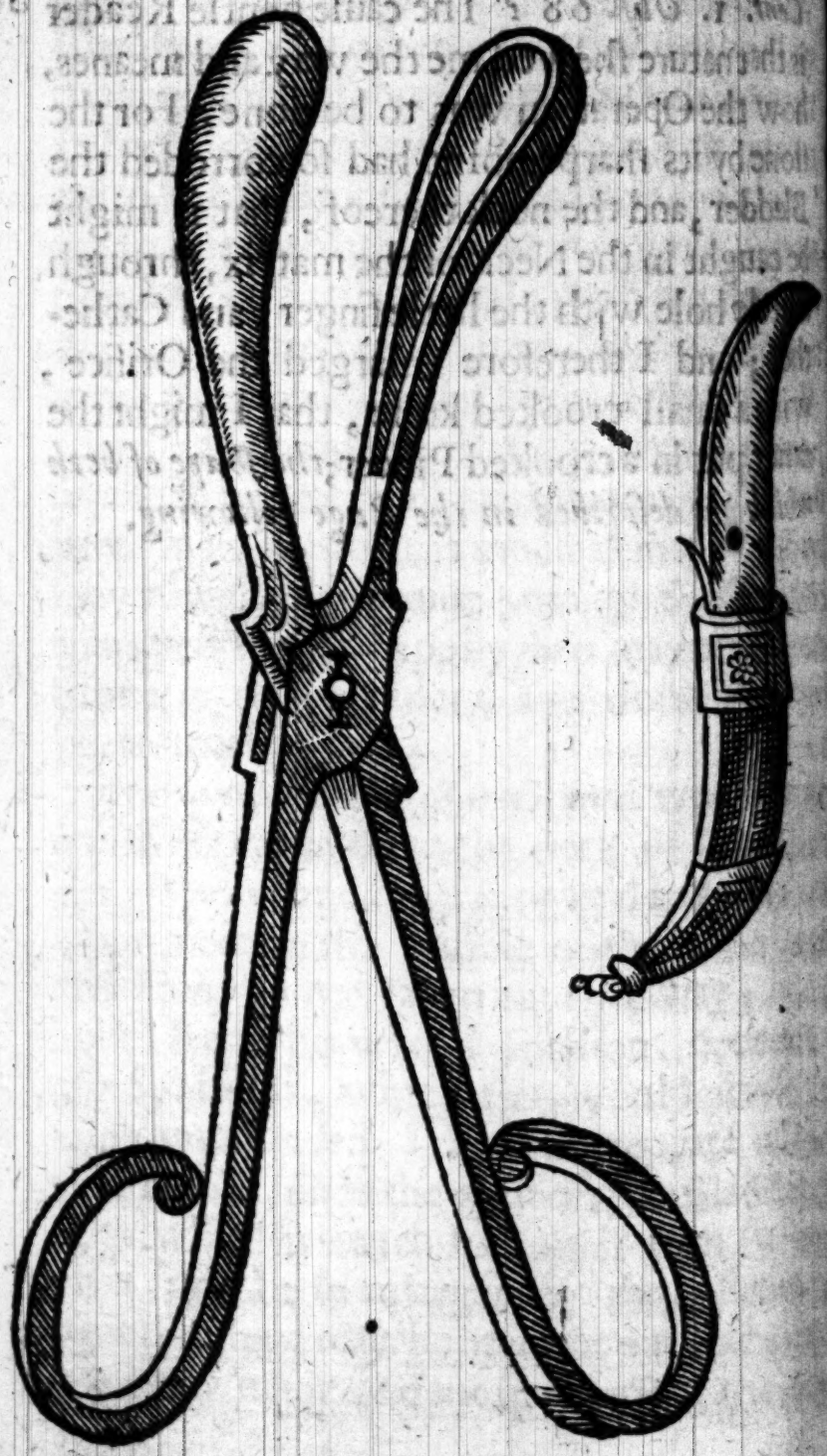
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of

of whoſe Bladder is more capacious?

But here will ſome reply, wilt thou refuſe this Operation, uſed by thy ſelfe, as appeares *Cent.* 1. *Obſ.* 68? The cauſe gentle Reader is that nature ſhewed me the way and meanes, how the Operation was to be done: For the ſtone by its ſharpe point had ſo corroded the Bladder, and the neck thereof, that it might be caught in the Neck of the matrix, through a little hole with the little finger, and Cathether; and I therefore enlarged the Orifice, with a ſmall crooked knife, that I might the eaſier put in a crooked Pincer; *the ſhape of both which are deſcribed in the Page following.* *Object.* *Solut.*



With these Pincers, I tooke such fast hold of the Stone, that at the second twitch I pulled it out, and the woman recovered, lived many yeares after, and brought up her children honestly. And for the woman of Fryburg mentioned in this Chapter, nature taught mee what to doe.

It being then apparant by both these examples, that in this place Lithotomie may be practised on women without danger, I think it best to forbeare Incision of the Bladder.

But this I would have understood of such stones, as for their greatnesse cannot be drawn through the *Neck* of the Bladder, and for hardnesse cannot be broken. Both the wayes of Incision, are attended with no despicable dangers: for if the neck of the bladder bee to bee cut, it is to be feared that the Sphincter may be wounded also, and the Patient will not afterwards be able to hold her Urine; and if the Incision be made under the Neck of the Bladder, there wants no cause of feare, because the wounds of the bladder are not healed but with difficultie.

But if the case were such, that I must of necessitie practise one of these, I would choose the last, there being many examples to prove that the wouds of the Bladder may be healed; amongst which the woman of Fryburg may stand for one, who was both perfectly healed of her wound, and was as well able to hold her water, as ever she was before in her per-

fect

feet health. But if this danger may happen by a wound caused by the sharpnesse of the Stone, and confluence of evill Humours; how much easier may it come by the wound made by a new Incision?

This way of Incision is thus to bee ordered and done: The Body being first prepared by fit diet, purging, and the like; let the woman be placed and bound, as hath beene directed formerly, and then let the Stylus Conductorius, not a straight one, but a little bent, bee thrust into the Bladder to the Stone, and that to this end, that the Stone may be raysed from the bottome of the Bladder to the neck thereof, and one of the Attendants having fastened upon the Stone with the Instrument, may writhe the handle of it, from himselfe towards the *Os pubis*; for by this meanes the Stone will presently appeare under the neck of the Bladder, where the Chyrurgian shall make incision upon it, through the neck of the mother, till he may touch it.

Having made Incision, let him presently catch, and draw out the Stone with the crooked Pincers, and the Attendant wrest the Instrument from himselfe, that so they may help each other. The Incision-Knife ought to bee covered with cloth every where, save only at the point, lest otherwise it might doe hurt elsewhere: The Sphincter is not to be touched; and the Pincers must not be straight, but bended a little upwards as it appeares by the former

former figure. Or if it pleaſe the Chyrurgian, he may make tryall of the Hamulus, as in men I diſallow it not; but the Stone being drawne out, he muſt proceed to ſtench the blood, aſſwage paine and the like, as hath been ſhewed formerly.

But becauſe theſe wounds by reaſon of the exceeding Nervous, and ſcarſe fleſhy ſubſtance of thoſe parts, are very painefull and not eaſily cured; for the Readers ſake, I have hereto affixed the Method and Medicines, which I uſed in the cure of the woman of Friburg, mentioned in the beginning of this Chapter.

Firſt, becauſe ſhee was much tormented with paine, I miniſtred unto her daily a little of the following Medicament which I injected into her Bladder, and the Neck thereof.

℞. *Sem. Cydon.*
Fœnugræc. ana ℥ j.
His groſſo modo contuſis affunde menſ. ſs *aquæ, in qua hordeum ad crepaturam incoxerit; ſeminibuſque prædictis per horam in eâ infuſis, coletur, & Colaturæ adde Ol. Amygd. dulc.* ℥ ij. *Mel. roſat.* ℥ j.

If any preternaturall heate happen in this way of Cure, the Chyrurgian may apply this Medicine in the manner aforeſaid. Becauſe alſo that ſhe went not to ſtoole orderly, I oft gave her Clyſters made of the decoction of a Calfes-head, Earth-wormes *m.* j. Yolkes of eggs *n.* ij. oyle of Dill, and Chamom. *ana* ℥ j.

℥ j. which Clyſter doth not only looſen the belly, but aſſwageth paine alſo, and is therefore to be injected into ſuch women as are Cut, as often as they are bound in their bodies, or tormented with paine.

To aſſwage paine, I alſo made her Baggs of a q. ſ. of theſe following Hearbs, & having boyled them in water, applyed them hot to her Perinæum, and Privities.

℞. *Rad. Althea*, ℥ j.
flor. Chamomill.
fol. Malvæ,
Violar. ana m. j.
ſem. Cydon.
Fœnugræc. ana ℥ i j.
Aniſ.
Fœnic. ana ℥ j.
Incidantur & contundantur groſſo modo, ad uſum prædictum.

But if there chance to happen any Hæmorrhagia after the Operation, then neither this nor any other hot fomentations are to be applyed, till it be ſtopped. I commanded her Belly, Privities, and Hipps to be annointed with the enſueing oyles, or unguents.

℞. *Ol. Amygd. dulc.*
Over.
Axung. humán. ana ℥ ß.
Ol. Lumbric.
Anethin. ana ℥ j.

The Loins, and *Os ſacrum* are to be annointed with the following oyles.

℞.

℞. *Ol. Rosac.*
Nymphææ,
Violar. ana ℥ j.
Camph. ℈ j.

Cum pauco albuminis ovi, & acet. rosac. misceantur, in mortario plumbeo, & agitentur, ad formam Linimenti.

After supper, and in the morning I administred unto her a little draught of the following Emulsion, which the Chirurgian may give to all such as feele any heate in their water, or are weake, and feeble, happily.

℞. *Amygd. dulc.*
sem. Papaver. alb.
4. sem. frig. major ana. ℥ ij.

Omnia contundantur, & cum aquâ seq, per pannum trajiciantur.

℞. *Ptisanæ,*
Aq. Nymphææ,
Rosac. ana. ℥ ij.
Cinamom. destill sine vino,
Borrag.
Bugloss. ana ℥ j.
Sacch. opt. ℥ j ß. *Misce.*

By use of these Medicines, her paine was sooneabated, and many stones were avoyded, through the neck of the Matrix. Sometimes also I purged her with this potion.

℞. *Agrimon.*
Veronic.
Cuscut. ana m. ß.
flor. Borrag. Bulgoss.

Violar. ana p. j.
Liquirit. ℥ ß.
Sem. Aniſ.
fol. Senn. ana ʒ. i j.

Decoquantur in aqua, ut Colatura redeat ad ℥ i j. in qua diſſolve

Electuar. Diaphœnic. cum Rhab. ʒ. ij.
Syr. violar. ſolut. ℥ j.
Miſce, capiat in aurora.

Sometimes alſo I gave her a little oyle of ſweet Almonds with Sugar, with Veale-broath in the morning. The pains being abated by uſe of theſe Medicines, I injected, for ſome dayes together, this following decoction, into the Bladder, and necke of the Matrix.

℞. *Rad. Conſolid. major. ℥ j.*
Hordei m. j.
Veronic.
Scordii,
Alchymill.
Sanicul. ana m. j.

Decoquantur in aquæ menſ. j. ad tertiæ partis conſumptionem. In Colatura diſſolve Mell roſac. ℥ i j.

As oft as I injected this medicine into her Bladder, it iſſued out againe by the necke of the Matrix, but alwaies brought out with it much phlegme, and ſome ſand. Beſides, ſhee could not hold her water for a long time; yet in the end, ſhee was delivered (by Gods bleſſing) from that trouble, as I ſhall ſhew by and by.

The

The Bladder being cleanſed with the forenamed injections, I put into the Necke of the Matrix, a big Tent of a fingers length, made of Flax, and Cotton, and dipped in the following water.

℞. *Aq. Plantag.* ℥iiij.
ſem. Cydon. groſſo modo contuſi, ʒ ß.
Miſceantur, & per dimidiam horam ad cineres macerentur: mucilago extract. trajiciatur per pannum, addendo C. C. *uſti,*
Lap. Calaminar.
Tutiæ, ana ʒ ß.
rad. Conſolid. major ſubtiliſſimè pulveriſ. ʒ ij.

This Tent I uſed for ſome time; and in the meane time, ſometimes I reiterated the preſcribed purgation, injoyned her to obſerve a good diet, and to refraine all meates and drinkes which might ſharpen her Urine. Beſides (becauſe her inward Bowells were free from obſtructions) ſhe ſometimes took a vulnerary potion, and a Syrrope made of Traumaticke Hearbs. By this meanes, the unvoluntary flux of the Urine was ſtayed, and at laſt it iſſued naturally through the Necke of the Bladder, and ſhee lived many yeares in good health, till at laſt ſhe dyed of the Plague.

But a long time is required for this Cure; nor can the Chirurgian bee certaine that the wound will cicatrize, or whether ſome fiſtula may be remaining, and the Urine may paſſe that way. Therefore againe I would deſire

every good and faithfull Lithotomist to beware, that in this case he doe nothing rashly and unadvisedly, and that hee would not appoint this Operation, but where all other remedies are hopelesse.

CHAP. XXII.

Of some horrid, and pernicious errors which are committed, by many common Lithotomists, before, at the time, and after the Operation.

HItherto wee have treated of the principall things to bee considered by the Lithotomist, before, & during the Operation, and Cure. But to give the young practioners more light, for a conclusion I have pleased to insert, and refute some grosse and pernitious errors, committed ordinarily, by many (the more is the pitty) which professe this Art, and thinke highly of themselves; all which I shall doe, with all curtesie, not intending to dispraise any private man for his way, but to instruct the unskilfull, and deliver the grieved Patients from misfortune.

1. Error. The first and chiefest error which is committed by common professors in Lithotomy, Cutting of Ruptures, and the like difficult Operations, is, when some dayes before the Operation, and during the time of the Cure, they grant him liberty to doe what hee will, without

without prescribing his diet, or order in other things of that kinde, or preparing his body by purging, but presently make incision upon him, as they finde him.

When therefore the body shall be Cacochymus, as it cannot otherwise be, or Plethorick, then all humours will fall downe to the affected place, whence afterwards, Paines, Tumors, Inflammations, Convulsions, and sometimes Death it selfe ensueth. The Chirurgian therefore ought not to attempt this dangerous Operation, unlesse the body be well purged.

Some are often much deceived, thinking that they have hit the Bird in the eye, when they have purged their Patients before the Incision, with *Antimony*, *Mercurius vitæ*, and the like strong Medicines, when nathe-lesse by these violent Minerals, the internall faculties, the radicall moysture, and naturall heat are so weakned, and oppressed, that ofttimes they can scarce be recovered; in which case, if Incision be appointed, and strength fayle againe, through paine, and flux of Blood, the Patient commonly submits to fate. The Chirurgian therefore, which is not so versed in the Theory, and Fundamental poi nts of Art, that hee can discerne the Nature, and Constitution of his Patient s, their strength, the predominant humour, and way to purge it, should not be ashamed, as many are, to advise with some learned Physitian, and joyne with him. For by his advise he may learne, and 2.

get praiſe, and credit; or if the Patient ſhould miſcarry, the Phyſitian may give a good teſtimony of his care and truſt, and excuſe him.

3. Some Lithotomiſts, the three laſt or more dayes before the operatiõ uſe morning & evening to adminiſter to the Patient a potion of the decoction of *Reſt-harrow*, *Grummell*, *Saxifrage*, and other ſtrong Diuretickes, to this end, that as they imagine, they may thereby drive downe the ſtone to the necke of the Bladder, and ſo catch it more eaſily with their Pincers.

The Medicine ſeemeth a proper one, and maketh a goodly ſhew; but it is unprofitable, and pernicious. Unprofitable, becauſe theſe Diureticke Medicines coming through ſo many Meanders, and turnings into the Bladder, as from the ſtomacke through the Guts, the Meſeraicke, and Emulgent veines, the Liver, Kidneyes, and Ureters, ſo loſe their ſtrength, that they cannot drive down the ſtone to the necke of the Bladder: And pernitious, becauſe Diuretickes bring along with them many groſſe and offenſive humours to the Ureters and Bladder, from the Stomacke, Guts, Meſeraick Veines, Liver, and Kidneyes, which after inciſion produce many dangerous Symptomes; as Paine, Inflammations the Gangrene, Convulſions, and death. Hence ſome skilfull Chirurgians, ſome dayes before inciſiõ uſe not to adminiſter any violent, but gentle purging potions. For if Medicines properly purging by the Fundament

ment, can alſo worke by the Ureters, how much more can ſuch as have a peculiar quality to procure urine, doe the ſame? Let every honeſt and carefull Lithotomiſt therefore refraine from adminiſtring Diureticks thus.

But if we would have the ſtone fall down, let the Patient (as hath beene ſaid) comming out of the Bath, and to bee cut immediately, walke about his chamber, and leape, if it may be. If he bee an infant, let him bee taken under the arme-pits and ſhaken a little; for ſo the ſtone of it ſelfe will eaſilyer fall to the necke of the Bladder, than it can be driven down by Diureticks. Theſe are the moſt groſſe errors which are committed before Inciſion, others as bad now follow.

Some Lithotomiſts, and cutters of the Rupture, thinke it neceſſary to ſtitch up the wound preſently, that it may quickly Cicatrize: But whether ſuch ſtretching bee helpfull or needfull, it may eaſily be determined: That it is not helpfull but rather hurtfull, it appeareth: Firſt, becauſe the Tent cannot bee put in as is requiſite, nor the blood collected in the Bladder, and rayſing many grievous ſymptomes, be ſtopped. Secondly, it is knowne to every man, that the ſtone being drawne out, many preternaturall things, as ſand, phlegme, congealed blood, and purulent matter remaine in the Bladder; and the wound being ſtitched up, how I pray, can this filth bee carryed away? The Retents in the Bladder, muſt needs

putrifie, and be corrupted, and thence will arife great paine, Inflammations, Tumours, Apoſtemes, Convulſions, and other deadly Symptomes. Thirdly, it being granted that neither congealed blood, nor gravell remaines behind, yet every man knoweth time and reſt to bee required for cleanſing of the Bladder, which hath been long exulcerated by the ſtone, weakened, & producing a thick and ſlimy phlegme each day, as we commonly ſee it in Calculous people. But this worke muſt neceſſarily bee done through the wound: for the urinary paſſage being long, with many turnings, and windings, it cannot be voyded that way; eſpecially the Expulſive faculty at that time being weake and feeble. This ſlimy humour then being retained in the Bladder, how can a perfect Cure bee expected? Will not ſome new ſtone bee bred, or ſome dangerous ſymptome ariſe? Yes doubtleſſe. This we have oft obſerved in outward Apoſtemes, yea in green wounds not well cleanſed, and cicatrized before their time; for then a ſanies is bred & collected in the bottome, and that cauſeth new and grievous Symptomes. Fourthly, the languiſhing Patient findeth new paines; for the wound ſwelling, & the Patient removing his thighes, the ſtitches cut, and ſtretch the lips of the orifice, and torment the Patient without intermiſſion. Beſides, the way of ſtitching bruiſed wounds, is againſt the method of all expert Chirurgians. And for theſe reaſons

ſtitching

stitching is not helpfull, but hurtfull.

That it is superfluous, and not needfull, every wise man may conclude, from the constitution of the part affected; when he shall finde that both the thighes being bound, as hath beene shewed in its place, the wound may as well cicatrize, as if it had beene stitched. These stitches then are not needfull nor helpfull. This is confirmed by the excellent Chirurgian *Pet. Francus. l. de Hernijs. c. 32.*

Yet this error is no new one, but hath been used many yeares; and I beleeve that *Theodoricus* was its first Author, as you may see *l. 3. c.* 44. of his Chirurgery; nor is it a wonder, the liberall Arts being then brought to utter Barbarisme, and, as it is probable, *Theodoricus* himselfe being a Church-man, and Bishop of *Cervia*, never having put his hand thereto: for as he confesseth in his præface, hee collected it from one whom hee calleth *Hugo de Lucâ*, with whom he stayed not long; so that it is plaine, that hee devised it and learned it not by his owne or *Hugo's* experience. But it is wonderfull that *Lanfranke Guido*, and other famous practitioners should like faithfull schollers, follow this Eccleſiastique, who was no Practicall, but Theoricall Chirurgian, in this pernitious error, and never marked how many sick men being cut, have paid their debt to Nature, by stitching up their wounds. I therefore, with all curtesie, would dissuade every honest Lithotomist from this error.

Many

5. Many Artists immediately after Incision, use to place the Patient in a Bathing-tub which they have filled with a decoction of proper hearbs, and leave him there for the space of halfe an houre, more or lesse, that (as they conceive) his paine may be abated; and the body cooled by incision, may be warmed againe. But the Bath ministreth occasion to these inconveniences, and symptomes following.

First, by the Bath, the wounded veines and Arteries are opened againe, whence ensueth such a flux of blood, that the sicke party is soone overcome with weakenesse, and sownings. Nor is this the least cause that many dye presently after the Operation, or languish with dejection of strength, and many chronicke diseases, because by the losse of blood, they are so enfeebled, that they cannot bee recovered. *Hippocrates* adviseth that no hot but cooling Medicines bee applyed to such as have the flux of blood, or in whom it is suspected. *Lib. Aph. & 23.*

Secondly, let us grant, that no *Hæmorrhagia* is to bee feared, yet every man knows that the body was troubled in the Operation, through vehement paine and an *Hæmorrhagia*, and the strength so lost, that no better remedy can be used than rest. Besides the Bath sending many vapors upwards, a dangerous Lipothymy may thence ensue, as I observed in a man of note some yeares since, after the Operation.

Thirdly, the quality of the Bath being attractive, many preternaturall humours being

but

but newly moved, are, as by force, drawne downewards out of the upper part of the body, especially out of the loines, and sometimes flow to the wound so impetuously, that a great tumour with an intemperies, and other symptomes follow: for by use of the Bath, all the passages in the affected place are made so large and slippery, that all excrementitious humours flow to the wound, and hinder the cure thereof.

Some Lithotomists reject the use of the Tent, and wholly apply themselves to heale up the wound speedily. This is great rashnesse, and contrary to the rules of Art; for it is not enough that the sicke man bee quickly cured, and restored to his former health; but it must be done safely, that is, without paine, and danger. But I see not how hee can be safely, and without danger cured this way: for unlesse by the helpe of Tents, the necke of the Bladder be kept open sometime, and the Bladder cleansed, there is a new gravell, and phlegme reserved, and the last evill is worse than the first: because this gravell and phleme, is againe coagulated, and hardned by the inflammation, and heate following the Operation. These Retents then, such as are plegme, and coagulated blood, wanting ventilation, are suffocated, and inflamed, whence commonly a gangrene, and death it selfe after most bitter paine ensueth. For, because of the inflammation of the Bladder, the urine cannot

not fall from the ureters into it ; and thence inflammation of the Kidneyes, a vehement internall distemper, Sownings, Convulsions, and the like arise. Some professors of this Art, doe also order their Patients to rise from bed the sixth, or fourth day, & think that thus they have hit the marke, and shall gaine to themselves fame, and credit. But a man of the least judgement may easily conceive how dangerous a course this is ; and what account they are one day to give to God for it ; as I have shewed before many men.

7. Seventhly, I cannot omit to advise the Reader to beware of a most pernitious error which hath beene delivered, not by the least of our moderne Chirurgians. He writeth, and affirmeth, that it is enough, if after the stone be drawn out, the wound be covered with a cleane linnen cloth ; and concludeth that the urine alone is able to heale it. Admirably spoken ! but how will you helpe such symptomes, as paine, swellings, inflammations, and the like, to which all wounds, great ones especially, and bruised, are subject ? or how will you prevent the symptomes, without proper medicines, and remedies ? Nay rather (say I) the Patient is thus exposed to danger of present death; for, unlesse the wound be kept open at first by the helpe of medicines and Tents, it will so swell and come together, that not the urine, much lesse the slimy, purulent matter & blood, which remains after incision,

can

can iſſue thence, whence all ſorts of evil ſymptomes and death follow.

But what helpe can bee expected by the urine, and how ſhould it doe the office of medicines to deſtroy the ſymptomes, and heal the wound: it then having not the nature of a ſimple excrement, but another adventitious one? For not only by reaſon of the paine, and inflammation of the Bladder, and wound, but alſo becauſe of the preternaturall and Feaveriſh heat of the heart, and the whole maſſe of blood, and the ſanies collected in the Bladder and about the wound, it getteth ſuch a corroding ſharpe pernitious quality, that I may freely affirme the retained urine, to bee one of the principall cauſes of thoſe dangerous ſymptomes, which attend this Operation. Let the Chirurgian therefore endeavour by all meanes to give the urine free paſſage, and not ſuffer it to bee retained: And this hee may doe without much trouble, by the Cannula and Tents, as hath bin ſhewed in its proper place.

Eightly, there is another, and no ſlight abuſe done by ſome Empiricks, who not only refuſe the uſe of Tents in the wound, but endeavour to cleanſe the Bladder from phlegme, gravell and the like, and to heale the wound perfectly by their Vulnerary potions. This is a great error, whereby many loſe their lives, it being impoſſible that Vulnerary potions ſhould reach the Bladder, and doe

8.

doe any good there, when Diureticks, as *Galen* and others write, and daily experience testifieth, though they be of a subtile, and peircing faculty, can scarce reach it; for how then can these astringent and dry Trawmatickes attaine thither to cleanse, and heale it? they will rather stop the Mesentery, Liver, and the other internall Bowells, and veines, as hath beene said *Cap.* 20. and raise evill symptomes as the learned *Io. Mattheus* testifieth, *Difficult. med. q* 30.

Calen Artis medic. c. 89.

9. Ninthly, some account it for an especiall and singular remedy, presently after the Operation, to apply a Boulster inbibed with white wine, & use it not only at the Patients first binding up, but through the whole course of the cure, as a famous Lithotomist not long since wrote unto mee, desiring mine opinion therein. I answered, that in these and other contused wounds, such medicines were required in the beginning, as were fit to stench blood, asswage paine, hasten suppuration, and repell the nocivous humours flowing from the body; that it is apparant that wine cannot stop the flux of blood, because such medicines should bee cold and dry, and wine besides its sharpnesse, is hot. That it could not asswage paine, much lesse hasten suppuration, because it doth vellicate the wound, and cause paine; and all Anodyna, & Digestives ought to be of an hot and moist nature, without acrimony. And lastly, that it would not repell the preternaturall

rall humours flowing from the body, it eing hot, whereas Repellents should bee old.

CHAP. XXIII.

Of the Symptomes, and Means to abate them.

HItherto the principal heads and things necessary for a Lithotomists knowledge, as farre as concernes the ordering of the Operation, have beene propounded, and explained. But because sometimes umberlesse pernitious symptomes, and preternaturall affects inverting the whole cure, nd often deceiving the best experienced and arned physitians, attend this great and danerous Operation, therefore the Lithotomist ould provide some learned Physitian, who ell knowes the nature and constitution of e Patient, and direct him not onely for his et, and the voyding of excrementitious mours, but bend his study to abate, correct d destroy the symptomes. This will purase the Chirurgian a good name amongst neſt and learned men; and though the end swer not his desire, the Physitian may comnd his diligence to the Patients kinred, and intaine his credit. This order I my selfe ve observed, as much as I could in all difficult

difficult Operations, not in vaine. But becauſe a Phyſitian cannot bee had at all times, the Chirurgian ought to obſerve theſe things following.

Firſt, that during the Cure, ſome dayes before, in, and after Inciſion, the Patient keepe ſtrict diet, but eſpecially that he may purge away whatſoever may heate and inflame the body, humours, and blood, that he take nothing but Broath, Creame of Barly, and huſked Oates, which in this caſe is moſt commended. Let him abſtaine from wine, and in ſtead thereof, uſe the Ptiſan, and the Emulſion of ſweete Almonds, as hath bin ſaid before, and need not be here repeated.

Secondly, he muſt be carefull to keepe the body open that he may goe to ſtoole naturally every day; for if the excrements of the Belly be retained in the body, and hardened, they will compreſſe the Bladder, ſtraight gut, and the other parts which were bruiſed, and excoriated in the Operation. For purgations he muſt adminiſter only *Benedicts*, as *Manna, rup. roſat. ſolut.* or *Syr. de Cichor. cum Rhab.* for how much the Patient may ſuffer by the uſe of ſtrong Catharticks, hath beene ſhewed formerly. The beſt and fitteſt medicine for people in this caſe, is this clyſter.

Clyſter. ℞. *Rad. Althææ*, ℥ j.
fol. Althææ,
Malvæ,
Mercurial.

Pariet.

Parietar. ana. m. j.
Chamomill.
Melilot ana m. ß.
ſem. Lini,
Fœnugrec. ana. ℥. ß.
Aniſ.
Aneth. ana ℥ j.

Decoquantur omnia in aquæ menſ. i j. *ad conſumptionem tertiæ partis; Hujus decocti pro adulto accipe* ℥ x. *Butyr. recent. Ol. Aneth. ana* ℥ j. *Vitell. ovorum num.* i j. *Sacch. rubr.* ℥ ij. *Miſce, & f. Clyſter.*

Of Suppoſitories

Suppoſitories are not ſo uſefull: becauſe by their ſharpeneſſe, and hardneſſe, they cruſh and exulcerate the Fundament, which was not a little ſtirred in the Operation, & by conſequent the neck of the Bladder. In cold weather there may be ſmal Suppoſitories made of freſh Butter, & kept in cold water, to be applyed; for theſe ſoften the belly, and aſſwage paine. In Summer, emollient hearbs are to bee added, and boyled with the meat. The beſt are Succory, Endive, Spinach, and the leaves of Monks Rubarbe, and Mercuriall; the two laſt whereof, do in a manner looſen and ſoften the Belly.

Thirdly, for prevention of the ſymptomes, the Patients conſtitution is much to be reſpected; for if he be young, ſtrong, plethoricke, hath not loſt too much blood in the Operation, then there may bee a veine opened in his right arme, the ſecond or third day after, and

blood taken, from him, with respect to his strength. This Phlebotomy doth prevent and hinder the internall heat, the Feaver, Inflammation, Tumours, Convulsions, and the like.

Fourthly, twice every day, or as oft as he is opened, let his Belly from the Navill to the Privities, Loines, and *os Sacrum*, be annoynted with *Ol. rosac. vel Myrtill.* or make for him this Liniment.

A Liniment for the Loines.

℞. *Unguenti rosac.* ℥ j ß.
Butyr. rec. in aq. rosac. loti,
Ol. Violar.
Nymphæa, ana ℥ j.
Mucilag. sem. Cydon. aq. rosac. extract,
℥ ß.
Camph. aceto dissolut. ʒ j.
Misce in Mortario, ad formam Liniment.

But if any preternaturall paine arise in the Belly, or neare the wound, then the Oyles used at the first, are to bee reiterated; as of sweet Almonds, of Yolkes of Egges, and the like; to which may bee added a little Oyle of Earth-wormes, against Convulsions; and the *os Sacrum* may be annoynted with it. Let this be spoken generally, and briefly of the Symptomes, and their prevention; for it is not for this place to handle them largely; nor doth that office concerne him wich cutteth the Rupture or Stone, but some learned Physitian called to that purpose.

CHAP.

CHAP. XXIV.

Of the retention of the ſtone in the Ureters.

IN the former Chapter I have treated of the Symptomes in Genere, which attend upon the Operation; but becauſe there are two (no light ones) Symptomes which are commonly incident to ſuch as have the Stone, for the inſtruction of the young Chirurgians, I ſhall runne them over briefly in the two following Chapters.

The chiefe, and moſt dangerous Symptome which can happen unto them, is, when the ſtone falling into the Ureters, and ſticking faſt in them, cauſeth moſt vehement paine, by reaſon of the ſtraightneſſe, and ſenſe of thoſe parts, as hath beene ſhewed more largely, Cap. V. An Inflammation of the grieved part, and death it ſelfe doth often follow this paine, eſpecially if the ſicke man hath both the Ureters obſtructed, and cannot voide his water. But here I would not have the Reader ignorant that the Ureters may bee obſtructed by ſome other cauſe beſides the ſtone of the Kidneyes, as appeareth by this example.

An obſervation.

Anno 1595. my eldeſt ſonne died at *Collen*; who till the ſeventh yeare of his age, had his neck, head, and whole body ſo cleane, that neither Puſtule, Scurfe nor Scab, could be found about him; which made me with griefe ſometimes tell my friends, this childe will dye of ſome ſtrange diſeaſe; as it afterwards fell out. In his ſeventh yeare, after an head-ach, which laſted a day, or two, there followed paine of the Loines, joyned with a Feaver, and ſuch a ſtopping of the Urine, that he could ſcarſe voide one drop. Three learned men, *Arnold Manlius*, *Iohn Kuenius* of *Bredenbach*, and *Iohn Slotanus*, all Doctors of Phyſicke, being called, uſed all their care and Art to helpe him; but in vaine, for the ſeventh day hee deceaſed. The Corps being diſſected by *Lodovicus Glandorffius*, an expert Chirurgian, in the preſence of Doctor *Slotanus*, were found a great Inflammation of the Kidneyes, and adjacent parts which were gangrenated.

An advise for all mothers of families.

It is therefore needfull, that all mothers of Families ſhould obſerve that they give no medicines to Infants for the Scab, or Itch, unleſſe it bee in the Eyes, Eares, Noſtrills, or the like parts; becauſe Nature being not able to purge this child by any breaking out in his body, the vitious matter fell downe to the Loynes in his ſeventh yeare, as by Critical expurgation, from the head, and thorax and obſtructed his Ureters: And though I no-

va

ver saw any example besides this, where the materiall cause of the Itch stopped the Ureter, yet I have met with many preternaturall affects in infants both inward, and outward, from whom Nature hath either not purged away the Itch, or it hath beene cured as by force, and provocation of Nature. Hence we see that children are often troubled with maignant and uncureable Impostumes, Strumes, Ulcers, Fistulaes, and the like; not to speake of those maladies which often grow in their noble inward parts, because Nature is not refined, or hindered in her worke. This I would have both mothers of families, and young Chirurgians to be advised of, because some of them make no scruple, to annoynt children with *Ung. Enulatum*, or *Bernhardinum cum Mercurio*. But let every honest Chirurgian beware of this course; and if necessity require it, fresh Butter alone, or washed with Rose-water, is sufficient to abate the torment of the Itch, if the place bee therewith annoyted, or mingle with it Creame alone, newly drawne from the Milke.

But to returne to our purpose: Nature hath made the Ureters very straight, even to the Bladder, their use and end being to keepe all slimy, and purulent matter from falling into the Bladder. But if it happen (as it doth in some Calculous persons) that many stones, and frequent doe slip through them into the Bladder, they arethen in processe of time, so enlarged, that

(I have seene it) stones of the bignesse of a Pease or Beane, doe sometimes fall from the Kidneyes into the Bladder, which can neither be without great paine, because of the exquisite sense of the Ureters; nor without great danger: For if the stone fall into the Ureters, and stick fast there, vehement paine, distemper, a feaver, want of rest, raving, Lipothymies, and the like dangerous Symptomes follow it; and the Inflammation of the affected part increasing, the thread of life is cut off by an ensuing Gangrene, and Sphacelus, as in *Iune* 1623 I saw it happen to a man of note in this neighbour-hood. When the Stone was fast in the Ureters, and could not be removed by any remedies, hee died, and after his decease, all his side became black, as it doth by a Gangrene.

How the Stone is deteined in the Ureters.

The Stone is detained in the Ureters, because it is sharpe, rough, uneven, and Angolous, and the Ureter narrow, and small. And besides, if the expulsive faculty be weake and feeblee through much paine, the Ston by reason of its sharpnesse, cannnot passe th the straights of the ureters, but remaines fas and if the sicke man bee full of evill hnmour and will use strong Diureticks, he shall brin downe abundance of phlegme, and vitio humours to the part affected, and so adde fue to the Fire.

There is lesse danger to have one urete only obstructed than both; for Nature do

dedu

deduce the Urine to the other Kidney, and through the Ureter thereof to the Bladder. I can truely affirme, that Anno 1624. *John Wolfe*, a grave man, and Citizen of *Berne*, had ſome ſtones impacted in his right Ureter, for three weekes together, that during the time hee felt much paine in the place affected, but the other Symptomes were not grievous, becauſe his Urine paſſed through the left Ureter into the Bladder, & thence by the common paſſages. I ordered the Cure for this man, as long as the Stone was detained in the Bladder, after the method which ſhall be deſcribed hereafter; and gave him few Diureticks, leaſt I ſhould drive downe other humours from the body into the Bladder. At length the ſtones fell downe to the Bladder, and were voyded by the yard without paine. *An Obſervation*

But when both the ureters are ſtopped by ſtones, ſand, or the like, there enſueth vehement torment, & the ſick man (as the excellent *Ambroſe Pareus* teſtifieth *lib* 17 *c.* 36) is often oppreſſed with the ſame paine, which they endure who are drowned. For the urine returneth againe to the *vena cava*, ſuffocateth the vitall ſpirits and extinguiſheth the naturall heate. Of ſuch torment, and the retention of the ſtone in both the ureters, a good woman of *Lauſanna*, by name *la Flammande* Hoſteſſe of the white Croſſe, dyed 30 yeares ſince. Beſides it hath bin obſerved, & *Pareus lococitato* witneſſeth that ſome have beene brought to ſuch extremities that they have voyded their urine *The Obſtruction of the vreters dangerous.*

urine vpward by vomit. The famous *Gregor Horſtius* ordinary Phiſitian, of the Imperial, & free ſtate of *Vlm*, my good frind, wrote vnto me this memorable caſe ſome yeares ſince. Foure yeares agoe (ſaith he) I ſaw a Boy at *Darmſtaet* 12 yeares old, who from his childhood once a day at leaſt vomited a ſalt water by his mouth like Horſe-piſſe. The cauſe was becauſe when he was but halfe a yeare old an Hogge bit of his *pudenda*, and left him as bare as the back of a mans hand, & the lips of the wound by the Barber-ſurgeons negligence grew together. The brave French Chirurgion *Barthol Cabrollius obſ.* 20. reports, that there was brought unto him a young gentlewoman, the neck of whoſe bladder was ſo cloſed up from her childhood, that ſhee voyded her urine by the navill, not without much paine. I haue here inſerted theſe two obſervable, and new examples, for the induſtricus Phyſitians ſake, by which it appeares, how wonderfull the Almighty worketh ſometimes, and produſeth admirable things in many men by his Servant Nature.

An Obſervation

An other

As ſoone as the Stone is impacted in the ureters, let the Patient have a fit Diet preſcribed for him; let him refraine all things that be crude and of hard digeſtion, ſuch meates, as inflame the blood, and humors, as ſpices, wine, and the like, and in ſtead thereof uſe the Emulſion of ſweete Almonds, ex Amygd. part. 2.

Order for Diet.

and

and *ſem Cucurb.* part 1. or provide him this following Potion.

℞. *Agrimon, Veron. ana. m.* ß.
Liquirit. ʒ j.

Incidantur, ac decoquantur in aquæ mens. ij. mellis. cochl. j. *per horam dimidiam.* Let him drinke hereof at his pleaſure. After, let him take the following Clyſter, and keepe it as long as he can.

℞. *Rad. Malv. Alth. ana* ʒj. *A Clyſter.*
fol. Alth. Malv.
Viol. Mercurial. ana m. ß.
Parietar. m. j ß.
flor. Chamomill. Melilot.
Sambuc. ana. m. ß.
ſem. Aniſ. Fœnicul.
Lini. Fœnugræc. ana ʒ ij.

Incidantur, & contundantur omnia, poſtea f. decoctio in aquæ fontan. ℔ iiij. *ad conſumptionem tertiæ partis: In Colatur.* ʒ x. *diſſolve,*
Butyr. recent.
Ol. Lilior alb.
Lumbricor. ana ʒj.
Vitell. Ovor. num. ij.
Salis, ʒ ij. *Miſce, f. Enema.*

Theſe Clyſters adminiſtred often, or at leaſt once every day will much helpe the Patient: for they mollifie the inward urinarie paſſages, and make them ſlipperie, eſpecially if they be long held by the ſick man. If they be detained in the Guts, let the Belly be moved by a Suppoſitorie, and adde but a ſcruple of ſalt, unleſſe

unleſſe he can containe them ſufficiently.

A Sacculus made of the ſame Hearbs, which are preſcribed for the Clyſter, of ſuch bredth, and length that it may cover the whole ſide, is to be applied to the affected place; and if the ſtone yeeld not to theſe medicines, make a bath of the ſame hearbs, and let the Patient ſit therein up to the navill, let him alſo drink *Ol. Amygd. dulc. cochl. j.* with a little *Syr. de Althea*, the decoction of *Agrimon. and Veronic.* with an addition of Licoras. If it may be, let him exerciſe his Body with riding, or walking that thereby the ſtone may the better fall downe to the bladder. Let the Bath be ſo ordered that the Patient may hold his feete without the water; for ſo he will be able to ſit the longer.

A Sacculus,

Some Apothecaries, and ſome which are ſubject to the Stone, uſe to keepe ſuch Bathing Tubbs, for their uſe, and if any would have them made for him, he may ſee their forme in *Pareus lib* 17. *cap.* 38.

For want of one of theſe, hee may uſe a Cover or Kimnell, of ſuch breadth, as he may conveniently ſit in it, and ſo deepe that the Bath may reach the Navill; this veſſell, is to be a little rayſed behinde, that his Back may leane thereon, and to be cut open or hollowed before, that the Patients thighes may hang forth. Herein let the Patient be ſeated as conveniently as may be; let the Bath be kept temperate, and let him abide in it a convenient time.

Let

Let hearbs enough be put into the Bath that it may be more efficacious. From the Bath let him be carried to his warme Bed, that his belly take not cold, and anon after his going out of the Bath, give him this Potion.

℞. *Ol. Amygd. dulc.* -- -- -- -- A potion to be taken after the Bath.
Syr. de Althea Fernel. ana. ℥j.
Coofect. Alkerm. ℈j.
Cum aquæ Parietar. & decocti pro potu ordinario præſcripti, ana. part. æqualibus ſ. Potiuncula; detur tepidè.

When he hath reſted a while after his Bathing, let his Belly be annointed even to the back bone, with this Liniment.

℞. *Ol. Lilior. alb. Scorpion.* A Lyneament,
Amygd. dulc. Lumbric. ana ℥j.
Pingued. Anſeris, Capon. ana. ℥ß, *Miſce.*

The Body being thus annointed, let the foreſaid Sacculus, or this Cataplaſme be applied hot.

℞. *farin. Tritici, Hordei, ana* ℥ ij. A Cataplaſme,
Pulv. rad. Althea,
fol. Malvæ, Parietar. ana ℥ ij.
ſem. Lini, Fœnugrac. ana ℥ i ij.
Coquantur cum decocto rad. & fol. Althea & Parietar. fiatque Cataplaſma: addendo ſub finem.
Butyr. recent.
Ol. Lilior. alb. Lumbric. ana. ℥.
Vitel. Ovor. num. ij.
Croci, ℈j. *applicetur calide.*

But let the Bath, inunction of the Loines, bagges

bagges and Cataplasme be so often reiterated, as necessitie and paine require it.

Of Vomiting

In this case, to remove the stone downward to the Bladder, vomit also conduceth, for by the motion, and concussion of his body, the Stone doth sometimes fall into the bladder, therefore unlesse he Vomit naturally, provoke him to it by *Benedict* medicines.

A draught of warme water mixt with *oleo Olivarum* doth procure it, especially if anon after the Vomitorie, the finger, or a feather dipped in oyle, be thrust upon the vnula. or.

A Vomit.

℞. *Rad. Raphan.* ℥ ij.
Menth. Hordei decorticat. ana p. j.
Coquantur omnia in aqua ℔ j ß. *ad consumptionem dimidiæ partis: adde parum Olei, vel butyri recent. & ægro propina.*

An other.

Another, a little stronger. ℞. *Agaric.* ℈ ij.
Rad. Raphan. Asari, ana, ℥ j.
flor. Roris marin. p j.
Coquantur in aqua, ut colatura redeat ad ℔ vj. *In quibus dissolve Syr. Acetos.* ℥ ij. *Misce.*

This potion being administred warme, the Patient is to be advised, to procure vomit by his finger, or a feather thrust downe his throate.

Purgations.

Purgations, are not to be administred to such Patients for the preternaturall, excrementitious, slymy humours, and the like, being driven downe to the guts, some part thereof may easilie fall to the Kidneys, and ureters.

Some take *Cassia* in this case, and extoll it as a singular medicine to coole the Reines, and Loynes; but others haue found by experience, that

that it procures urine, and makes it acrimonious; of which subject, the reader may peruse the learned *Petr. Pigra.* lib. 7. cap. 4. and *Cent* 1. *Epist. mearum, Epist.* 34. and 35. Of Cassia

Some also in this retention, and Interception of the stone in the ureters, commend the vulgar officiall powder called *Lithontribon*, and other strong *Diuretickes*; which are not voyd of danger, unlesse the body hath been lately purged of all vitious humours: for otherwise these kind of medicines (as I have oft observed) will drive downe evill humours to the Kidneys out of the upper parts of the body; so that not onely the stone is locked faster in the ureters: but, as I have sundry times found it, an inward Inflammation, and death doth ensue. Here then, much discretion is requisite; and if sometimes nature be to be succoured by these medicines, let a third part of *sem. Cucurbitæ* be added to the Almonds, which doth not only coole the Reines, and ureters, but after a kind procure urine also. Of strange Diuretika

Sometimes also the Patient may take a little draught of *Aquæ Parietar.* or *Petroselin.* mixt with the *Syr. de Althea Fernel.* or add to the Emulsion of sweet Almonds, a little of the said waters; for so he shall move urine, more or lesse according to the quantitie of the water.

These greivous sicknesses, are most commonly attended with dangerous symptomes, as an hot inward distemper, Lipothymies, Of the Simptoms

want

want of reſt &c. and it is therefore neceſſary that the Chirurgian ſhould conſult with ſome learned Phiſitian, that nothing may be omitted, but all things may be undertaken with diſcretion, and wiſdome. For nothing is to be done raſhly in this caſe; and an errour once committed, is ſcarce to be repaired. If therefore any great internall diſtemper, or thirſt afflict the Patient, it will not be amiſſe to open a veine in the flict Arme according as his ſtrength will beare it.

Phlebotomy indeed will hinder the inward inflammation, and other Symptomes; yet beſides that, let him be præſcribed a diet, for the cooling of his body, of which we have treated *cap. 9.*

If he be coſtive, he is to be eaſed by the preſcribed Clyſter, and to prevent Lipothymies, cauſed by vehement paine, diſquiet, and watching, let the reader peruſe *cap 19.*

If his paine will not be mitigated by the foreſaid medicines, and the Patient can take no reſt, adminiſter unto him this potion.

A potion to mitigate paine and to procure ſleepe.

℞. *Aq. Lactucæ. Parietar. ana* ℥jß. *Syr. de Papavar.* ℥j. *Althææ Fernel.* ℥ß. *Confect. Alkerm.* ℈j. *Miſce f. Potio.*

Give it two howres after Supper that he may ſleepe upon it. In my Patients I have often obſerved that the paine being aſſwaged, and ſleepe following it, by this potion, and other medicines of this kind, nature alone hath driven forth the ſtone.

CHAP

CHAP. XXV.

Of the Retention of the ſtone in the Yard.

THE ſtone (by Gods bleſſing) being fallen out of the ureters into the bladder, the paine ceaſeth preſently; but the Operation is not done. For the ſtone is not ſeldome retained, in the Yard, and *Vrethra*, where it ſtoppeth the urine, and cauſeth great torments; yet it is leſſe dangerous than if it ſhould bee detained in the ureters, becauſe the *Vrethra* paſſing through the Yard, is commonly larger than the ureters: I adde *Commonly*. For I have had ſome Calculous perſons in cure, whoſe urinary paſſage through the Yard was ſo narrow, that the ſtone could not be voyded then, without much trouble, and torments; when nevertheleſſe, they had fallen out of the Kidneys, through the ureters into the Bladder, without any forcing.

This ſtraightneſſe of the *Vrethra* may ariſe from nature or its firſt conformation, becauſe nature doth not alwayes keepe the ſame tenor in all particular ſubjects, but doth ſometimes produce ſome member bigger, or leſſe in one than another. Againe, it may be cauſed by accident; as if the *Vretha* of a calculous man hath beene weakened in his youth, by the *Gonorrhœa*, The ſtraightneſſe of the *Vrethra* whence it procedeth

norrhœa or some stone hath bin taken from him; for then the *Cicatrix* straightens the passage, more than it was formerly.

There is repect to be had of the age also; for as young men have all their members, veins, & passages, soft slippery, & large; so they are all dryed, and hardned in old men; and therefore their vessels, veines, and cheifly the urinary passages be lesse, and straighter: whence, and from the weakneſse of the expulsive facultie, they voide they vrine, not without trouble and difficultie. But they who frequently, and for many yeares together have voyded many stones from the Kidneyes, through the ureters and *Vrethra*, have their passages a little more enlarged, & they elder they grow, they voyde them with lesse danger.

An Observation. Thirtie yeares since, I went to a noble personage of the familie of *Hatzfeld*, Lord of *Wildenberg*, who shewed me an incredible number of stones, which he had voyded from his Kidneys through the yard; who though he was then 60 yeares old, could voide stones as bigge as peaſe, and beanes, without much trouble; becauſe his urinarie passages had bin long worne and enlarged by the multitude of stones, which he voided.

An other. I yet keepe at home in my study, a stone like a date-stone, which I tooke from a man of threescore, without cutting, though not without some paine, to him, yet with out danger of death, for he survived 6 yeares after, & often voided

voyded ſtones without much trouble.

But this being granted; yet the retention of the ſtone in the yard, is not ſo dangerous, as in the ureter; becauſe wee can reach it better, with our Inſtruments, and medicaments, than if it was faſtened in the ureter: and though all other wayes ſhould fayle, yet wee can flye to the laſt refuge, that is, the Inciſion of the yard in the place where the ſtone is fixed, as ſhall be ſhewed at large hereafter.

If it therefore happen that the ſtone be retained in the yard; for a faithfull and careful Chirurgian, for his owne glory, & a large reward preſently to appoynt inciſion, this I ſay becomes not a rationall, & faithfull Chirurgian, but all remedies are firſt to be applyed to bring forth the Stone without cutting, and if they bee fruitleſſe, and the Stone abide unmoved, of two evils the leſt is to be choſen, and in the end he muſt uſe inciſion as his laſt remedy.

The knife muſt be kept as much as may bee from the Urethra, becauſe in the wounded place a hard ſcarre, will ſtill remaine hindering the enlargeing of the Urinarje paſſage.

Afterwards therefore, when other ſtones are to be voyded, the yard being cut in that part where the ſtone was, growes harder, and narrower, becauſe of the cicatrice, & the ſtone is ſtopped againe, and a new Inciſion is to be ordered in the ſame, or a neer adjoyning place. Hence it often happens that the wound turnes into a Fiſtula, and

cannot be cicatrized.

But what inconvenience the Patient may suffer hereby, I leave it for every wise man to judge; seeing the seed, and the urine do both issue out of the Fistula; for which cause I have alwaies endeavoured to bring away the stone without Incision.

Therefore as often as the Chirurgian shall thinke that the stone will fall into the yard, and haveing already slipped out of the ureters into the bladder, hee must prepare, and open the way for it, keeping the lower Urinarie passage of the yard soft, and slippery; to which purpose the Clysters, Liniments, Cataplasmes and Baths, described in the former Chapter, are usefull.

If then when the stone is detained in the Urinarie passage, thou art called to the sick man, thou shalt prescribe him a fit diet, of which because wee have treated enough, and enough, in the ninth, and former Chapter, it is here needeleſſe to speake more.

Afterward thou shalt apply unto him hot a bagg of that bigneſſe that it may cover all his privities, filled with the emollient herbs mentioned in the former chapter, and boyled in water or new milke; the place affected being a little fomented, thou shalt take away the bagg, and annoynt the whole region of the *Pudenda*, the yard, lower belly and *Perinæum* with the unguent described in the former

Chap-

Chapter; afterward, thou ſhalt againe apply
e bagg, & bee carefull that the affected part
ke no cold; for cold in theſe diſeaſes is moſt
rnitious; and it is requiſite that two baggs
e provided, that the cold one being taken
way, an hot one may bee at hand for thy
ſe.

If perhaps the Patient ſhould deſire to uſe
e Bath, which in this caſe is moſt condu-
ble, then anon when hee is come out of the
th, & wiped with hot linnen; the Priviries,
e lower belly, and *Perineum* are to bee an-
ynted with the foreſaid Oyntment warme,
d the baggs afterward to be applied warme,
d this courſe to bee continued till the ſtone
peare unto thee. But let the Chyrurgian
hile hee annoynts the yard, lift it vp gently
ith one hand towards the navill, and with
e other hand drive the ſtone as much as
e can upwards toward the Glans, with care
at he drive not the ſtone back into the blad-
r, but by all meanes mollifying, and mak-
g ſlippery the Urinarie paſſage to bring
out: to which end I uſe to take a ſufficient
antity of hearbs preſcribed in the former
apter, and boyle them in new milke, and
ſcruple of butter, and put the *Colature* into
ot or jarre that the ſick man may hang
s yard therein covertly; and as ſoone as this
olature begins to coole, it muſt bee changed,
d an other be in readineſſe for the ſame
ſe.

By these unguents, and baths, the Urinarie passage is softened, and made slippery, that the stone may thereby the easier bee expelled. Nor doth it a little helpe if Oyle of sweete Almonds mixed with Oyle of Scorpions bee injected by a Syringe into the bladder, to the very place where the stone sticketh; for this injection hath a double use, the Urethra being not only mollified, and made slippery by the Oyle, but also in a manner enlarged by the ayre and spirit breathed in by a Syringe, and if the Patient would then endevour to voyde both his Urine & the stone the stone might slipp out more easily. This I have often observed in my Patients, especially in the venerable and discreete old man of Seventy, *Anthony Vetzerin* of blessed memory, whom six or seven yeares before his death I so happily cured, by Gods helpe, of the retention of his urine & stopping of the stone in the ureters and yard, that I never needed to use Incision; but his paine sometimes increasing I gave him the Potion described in the end of the former chapter, by which himselfe and many other sick persons have found much benefit; for thereby the tormenting paine being allayed, the Patient would take some rest, nature be refreshed, strength recovered; and hence the expulsive faculty is quickened and expelleth whatsoever is offensiue to nature.

This I observed Anno 1621 at *Mura*

n a man of ſixty, of no obſcure family, *Io-* An obſer-
annes Iacobus of *Dieſbach*; to whom (not vation.
neglecting Baths, Epithemes, Clyſters and
nd the like, though in vaine applied) in the
etention and ſuppreſſion of his urine, at laſt
ne evening at nine of the clock I gave the
reſcribed potion, and when hee had ſlept all
ight upon it and ſwett abundantly, his paine,
nternall heat, and other ſymptomes well
ated; though, his ſtrength being dejected,
ll the ſixt or ſeventh day after, hee could not
old his water, yet by Gods bleſſeing hee re-
vered his health, and lived till the ninth of
nuary 1627 current.

Now ſome Chirurgians, uſe to employ a
rvant, to ſuck or milke the membrum virile,
tempting thereby to draw out the ſtone;
t beſides that by this ſucking, the paſſage of
e urine can not bee enlarged, but is rather
ntracted, and the ſtone held faſter, unles it
e in the former part of the yard, this in-
nvenience alſo followes, that thereby a-
ndance of blood, and humors are by vio-
ce drawne downe to the yard, and the e-
l is made worſe. It is better therefore to
ſt and continue the preſcribed medicines,
l to be carefull that the Patient bee not co-
ve, and to preſcribe him a good diet.

The ſtone not giveing way to theſe medi- How the
es, wee ſhall attempt to breake it, as it may ſtone is to
done eaſily, if it bee a ſoft one. be broken
in the
Ambroſius Parous that excellent and fa- yard.

mous Chirurgian, uſeth to this end a ſcrewe
pearcer, ſmall, and ſharpe, which ought not t
bee made of ſteele, but ſlender Iron. That th
vrethra may not bee hurt, let the cannula be fi
thruſt up to the very ſtone, and then let th
Chirurgian, taking the yard with his l
hand, in that part where the ſtone is incloſe
take hold of the ſtone with his thumbe a
foreſinger, & afterward the cannula being gen
ly thruſt downe by ſome attendant to the v
ry ſtone, let the Chirurgian thruſt the pearc
to the ſtone, twitting it round, & ſo the poy
thereof will by little diminiſh and breake
This done, let the Oyle of ſweete Almon
and Scorpions, bee injected into the yard, a
the uſe of the baggs and Liniments bee co
tinued, till nature can expell the brok
ſtones, and gravell together with the uri
The *Cannula* muſt bee made of fine ſilv
and the Pearcer of Iron, becauſe ſteele m
bee eaſily broken, and leave its ſplinter
the urinarie paſſage.

How the ſtone is to be broken in the Yard.

The Chirurgian ought to be carefull, l
in this boaring, and breaking, hee hurt
paſſage of the urine. If therefore the ſto
may bee reached with the Pincers, it is the b
and ſafeſt way; becauſe the ſtone may ther
at once be drawne out, and a ſick man deli
red without further trouble. The Pincer ou
to bee made of thinn Iron, & the beake th
of not to exceede the biggneſſe of a mid
ing quill; in the hinder part it ſhould be m

of ſtrong and thick Iron, that the beake thereof may the better catch and hold what it hath caught. It muſt be round and light, annoynted with Oyle of ſweete Almonds, or freſh butter, and not to be uſed cold, but warmed in hot water.

Let the Pincers be put into the yard as gently as thou canſt, even to the ſtone: which that thou mayſt doe the better, take the yard about the Glans with thy left thumbe and forefinger, and lift it up; but the Pincer being brought to the ſtone, commit the yard to ſome attendant to be held up; and thy ſelfe having a little opened the Pincers, take hold of the ſtone with thy thumbe, and fore-finger of thy left hand, & drive the ſtone to the Pincers, that they may the better take hold of it and draw it out. The ſtone being drawne out, let ſome Oyle of ſweete Almonds, or new milke be injected into the urinarie paſſage, that it may be brought to its naturall lubricitie. But if the ſtone hath bruiſed, exulcerated, or cauſed an inflammation in the Urethra, in liew of Oyle of Almondes apply this medicine.

℞. *Aq. Plantag. Roſar.*
Fragar. ana. ℥ ij.
m. Cydonior. contuſ. ℈ ij.
Macerentur per horam in loco calido, poſtea at expreſſio, cui adde
C. C. uſti & præparat.
Tutiæ præparat.

Plumbi ſquamoſ. loti & præparat.
Caphuræ ℈ ß. *ana* ʒj.
Miſce.

This medicine aſſwageth paine, ſuppreſſeth the Inflammation, and healeth the exulcerated parts.

There remaineth another meanes, whereby the ſtone may be brought out of the Urethra with leſſe paine, and danger than by Inciſion, or fraction by the pearcers, or pincers, that is by dilating the paſſage with a light Inflation. The Chirurgian then, haveing by his Syringe injected the Oyle of ſweete Almonds into the yard to the very ſtone, that the paſſage may bee filled therewith, let him permit the Patient to reſt halfe an howre, that the Oyle may throughly moyſten, ſoften and lubricitate the ſtone and the Urethra, the yard being ſtill covered with the Emollient bagg before deſcribed.

Theſe things thus done, let the Chirurgian thruſt the Cannula into the urethra, and having brought it to the ſtone, let him take the yard neere the glans with his left hand and cruſh it ſtrongly. The urethra then being a little enlarged by the breath inſpired through the Cannula, with the fore-finger of his right hand let him gently drive out the ſtone, which if it can not be done the firſt or ſecond time, let him not therefore give over, but with moderation repeate the former courſe

avoy

avoyde paine. Every Fidler, Emperick, juggling Mountebank, or drunkard, is not fit for this worke; but a discreete, and skilfull Chirurgian.

CHAP. XXVj.

How the stone is to bee cut out of the Yard.

IF the stone doth not give way to any Remedies, and cannot be driven out, so that by continuall retention of the Urine, the symptomes grow dangerous, and fearefull, Lithotomie is to be used, as the last remedie; wherein the Chirurgian againe, shall not first neglect to prescribe a fitting Diet; and then make choyse of a convenient place for the Operation.

An errour of some Chirurgians.

Some Chirurgians make Incision upon the very stone, that is in the lower part of the yard, and middle of the Urethra; which is not to be approved: because the urethra there is scarce fleshy, and therefore the wound cannot be well cicatrized, but that as I have observed, Fistulaes may be remaining: for this reason, Incision is to be made neere the urethra, and in the carnous part of the yard, in manner following.

The Patient being layd upon his back, place thy selfe on his right hand, and with the thumbe

thumb, and fore-finger of thy left hand, take hold of his yard; yet ſo, as thy hand may lye upon the *Os pubis*, and the yard laid upon thy fore-finger may hang out, and be preſſed downewards, with thy thumbe, towards the Belly; yet the ſtone, may lye faſt upon the upper part of the fore-finger, and then order the Inciſion, neere the urethra, by the length of the yard, till thou mayſt reach the ſtone, with the point of the razour. If then the ſtone (becauſe the ſkinne diſtended in the upper part, doth rayſe thy fore-finger, his yard, and ſtone together upward) doth not voyde of it ſelfe, it is to be drawne out, with an Inſtrument of Art for this purpoſe. If any flux of blood enſue, the Chirurgian is to haue a Tent ready dipt in the white of an egge, and dreſſed with the powder to ſtop blood, which wee haue deſcribed cap 10. to put it into the wound, which hee is alſo to cover with the Boulſter inbibed in the yolke of an egge, and to bind it up. At the firſt opening, let him annoint the belly, and inguina of the Patient, with the Oyles deſcribed in the beginning of cap. 20, and dreſſe his Tents, and Emplaſters with the Digeſtive deſcribed in the ſame chapter, and ſo open him twice a day. If at laſt hee would apply a balſame to cicatrize the wound, it will not be amiſſe. But if any paine, and flux of evill humours fall upon the yard, the following Cataplaſme

may

may be applied hot.

℞. *farin. hordei* ℥ ij.
Pulv. Rosar. rubr.
Balaust. ana ℥ i.

Coquantur cum q.s. aqua Parietariæ ad formam Cataplasmatis, addendo sub finem Oxymelitis simpl. ℥ j. *cum vitello ovi unius.*

That the urethra may not grow narrower in the place whence the stone was cut out, or proud flesh grow there, and afterward afflict the Patient, it is requisite that the Chirurgian thrust into the yard a waxe candle, or Leaden fillet annointed with *Ol. Diapompholiges*, or the Emplaster *de Ranis*, and renew this Operation, as need requires.

CHAP.

CHAP. XXVij.

How they are to be handled, from whom the ſtone cannot be taken away for its biggneſſe or other cauſes.

BEcauſe it happeneth that the ſtone in the bladder, is ſometimes ſo bigg that it cannot be drawne out, without danger of death, and therefore it is beſt not to meddle with it, that is to appoint no Inciſion for it, as *Avicenna* and *Lanefrancus* write, and that excellent *Medico-Chirurgus Ioh. Andreas. à Cruce* adviſeth *lib. 5. tract. 3. c. 3.* and in his *Officina Chirurgica*; leſt the Patient ſhould dye, or a Fiſtula remaine in the place affected, by reaſon whereof he muſt ſpend the remnant of his age in great miſery; and becauſe ſome ſick people are of ſuch dejected timorous ſpirits that they die of meere feare; and it becomes not a pious and faithfull Chirurgian (as hath bin ſhewed els-where) to ſhorten the life of any one; it is therefore needfull, that I hereunto annex the manner how ſuch Patients are to be handled.

Thou ſhalt exhort him to Chriſtian patience, and ſhew him that the Originall cauſe of this, and all other diſeaſes, afflictions and griefes, is partly from our ſelves, partly from God our heavenly Father, for the ſcripture hath ſaid, there is no evill in a Citie which God

God hath not done: which notwithstanding, is to be piously understood, and with a distinction.

The Spirituall, præternaturall, and sometimes the naturall cause of all Sickness, is from our selves, and in our selves. The Spirituall, and præternaturall cause, is the corrupted nature derived from *Adam* to our selves, because wee are conceived, borne, grow, and waxe old in sinne, yea, because our whole nature, life, and Actions are inclined to sinne, and so deserve not only a Temporall but Eternall punishment.

The naturall cause of Diseases, is caused in us by our inordinate lives, by drunkennesse, and the like, as shall be shewed at large in its proper place.

That which I before affirmed, *viz* that there is no evill in a Citie, but the Lord hath done it, is not untrue, though it be spoken to another end. For because the mercy of God towards man-kind is so great, that God from the beginning appointed his most beloved Sonne should dye, as a Sacrifice, and propitiation for sinne, that man might be saved; and nothing uncleane, and polluted with sinne can communicate, and partake of his Kingdome: therefore sicknesses, afflictions, and miseries are layd upon us to this end, that by them wee should be brought to repentance, and purified like Gold in the fire. As there-

therefore a skillfull Artist will not suffer his Servant to take the Gold out of the coales, till it be well purified, and fit for his purpose; so God, our Heavenly Father, will not permit the sick man, or Physitian, to shorten, or cut of the thread of life in the greatest torments, griefe and miseries, but will punish such impatient people as refuse *to take up the Crosse with Christ*, and by many tribulations to enter into his Kingdome. Let the sick man therefore alwayes remember that sentence of the Prophet; *Lord, I will beare thine Anger, for I have sinned against thee*: Helpe me, behold my infirmitie, and give me patience, and constancy in all things.

But if God will not spare such sick people, as are driven to impatience by torment, how will hee deale with those rash Quacksalvers, and Impostors, who though they know the Patient must die, if hee be cut, are nevertheless, so giddy-headed, that for a sordid gaine, they sleight the matter, bewitching the Patient, with magnificent words, and large promises, till they have brought him to the slaughter? How, say I, shall they bee dealt with? They will make an ill account of their actions before God; yea, their owne consciences, wil accuse them before his Tribunall.

Let no pious and honest Chirurgian therefore, in this, and other dangerous Operations, where the Patient may survive some time with

with his diſeaſe, endeavour with vaine promiſes to perſwade him to be cut, nor extenuate the buſineſſe, but waite, till the Patient, or his Kinſmen call, and ſollicite him to it; leſt willingly, for filthy lucre, hee cut of his dayes.

But in ſuch a ſickneſſe whereof the Patient muſt needes dye without helpe within few dayes, let him labour all hee can to preſerve him. For example. Anno 1614 when I was called to *Copet*, and ſollicited to cut of the thigh of a childe (whome I have mentioned *cent.* 4. *Obs.* 91.) above the knee, I undertooke the Operation, when I ſaw the child otherwiſe could not live above five or ſix dayes: but the Operation gave mee ſome hope, and God ſo bleſſed it that hee ſurvived in health to this yeare 1626. and perhaps to this hower.

The caſe of the ſtone is otherwiſe; for hee who is diſeaſed therewith, may carry it about him for many yeares, and doe good ſervice to God, and his Countrie; as I have knowne many, who in this miſerable ſtate, and torment, haue lived to an old age.

This Operation then being dangerous in elder people (eſpecially when the ſtone is bigg) for two cauſes: firſt, becauſe their nature is decayed, and growne weake; ſecondly becauſe the ſkin, muſcles, veines, and other parts which ſhould bee enlarged in the Operation

peration, through old age are withered, dryed and deprived of all juyce, and natural humor; therefore the ſtone is harder to bee taken away from old people than the yonger ſort, as hath beene ſhewed more largly *cap.* 10. Whoſoever therefore refuſe to ſubmit themſelves to the Operation, and deſire a Palliative cure, let them conſider the things following.

What is to be obſerved by ſuch as have the ſtone.

Firſt, it is required that ſuch as have the ſtone, obſerve an exquiſite diet, and refraine and beware of all ſuch things which may augment the ſtone or make it bigger. They ſhall therefore avoyde all groſſe, crude, and ſlimie meates. All Spices, except Cinnamon, Saffron, Mace, and Nutmeg, are hurtfull for them; for thereby the efficient cauſe of the ſtone is nouriſhed: ſtrong wines, immoderate exerciſe of the body, and in one word, all things that heate the body, are naught for them, as the Reader may ſee more largely *cap.* 9. For ordinary drinke, they may uſe white wine of a yeare old; but of no aſtringent qualitie. Such as are compelled to uſe beere, muſt not drinke it new, but well boyled and purged, or they may provide for themſelves the Decoction of Agrimony, and Veronick, with Licoras, as hath beene ſayd *Cap* 9. and uſe it.

The Emulſions of ſweete Almonds prepared as before, are very healthfull for them

them, eſpecially when they are in paine; for by the oyly iuyces of the Almonds and Melon-ſeedes, the Urinarie paſſages are eaſed and made ſlippery. Raddiſh, Muſtard, Water-creſſes and all ſtrong *Diuretickes* are moſt pernitious; for thereby the Stone is driven downe to the neck of the Bladder where it cauſeth extreme torments: when rather the Stone ſhould be driven backward as much as may be from the neck of the Bladder, as ſhall bee ſhowed hereafter.

It is needefull alſo that the ſicke man ſhould take a medicine ſome-times, which may ſtrengthen the ſtomack and inward bowells, and helpe concoction.

To this end, eſpecially that Nature being ſtrengthened may the better conſume the excrementitious humours, and hinder the augmentation and increaſe of the Stone, Conſerve of Roſes, Mint, Pontick, Wormewood, the rinds of Citrons and Oranges, Aniſe, and Fennell ſeede, and the like, are much commended in this caſe; or let there be prepared for him the following powder. A powder.

℞. *Specier. Aromat. roſat.*
Diarrhodon. Abbat.
Cinnamom. elect. et pulveriſ. ana. ℥i
Cort. Citr. ſicc.
Pellic. Ventriculor. gallinarum, ana. ℥i ß.
Saceh. roſat; ℥vi.
Miſce. f. Tragea.

An Electuary.

Or ℞ .*Conſerv* . *Roſar* .
Menthæ ,
Abſynth . *Pontic* .
Cort . *Citr* . *condit* . *ana* . ℥j .
Pellicular . *interior* . *Ventricul* . *gallinar* .
ſubtiliſſime pulveriſ . ℥iij .
Confect . *Alkerm* . ℥ij .
Margarit . *præparat* .
Corallor . *præparat* . *ana* . ℥j .
Cum Syrupo de Althea Fernel . *q* . *ſ* .
Electuarium .

Let him take the quantitie of a great nut, of this Electuary , in the morning faſting , at night going to bed , and after dinner. If he complaine of the weakeneſſe of his ſtomache, the pit thereof and region of the heart may be annointed dayly with this Liniment .

A Liniment to ſtrengthen the ſtomach.

℞ . *Ol* . *Menthæ* .
Maſtich . *ana* . ℥j .
Gumm . *Tacamahac* .
Elemi , *ana* . ℥iij .
Terantur ſimul lentiſſimo igne , et colentur per pannum : poſtea admiſce Ol . *nuc* . *moſchat per expreſſionem facti* , ℥ij . *Ol* . *gariophyll* . ℥ .
Miſce , ſervetur in vaſe vitreo .

Let this Emplaſter be alſo applyed to the region of the ſtomack .

An Emplaſter.

℞ *Gumm* . *Tacamahac* . *elect* .
Elemi pinguiſs . *ana* . ℥j .

Ol. Menthæ,
Cydoniar. ana. ℥ ß.

Diſſolvantur omnia lentiſſimo igne & per-colentur; poſtea admiſce Ceræ novæ ℥ j ß.

Pulv. Maſtic.
Oliban. ana. ʒ iij.
Gariophyll.
Nuc. moſchat.
Roſar. rubrar. ana. ʒ j.

Miſce, fiatque Cerotum ſ. a. addendo Ol. Menthæ, q. s.

It is alſo required in this palliative cure, that the Patient ſhould a little coole his Liver, Kidneyes, and Urinarie paſſages, and reſiſt præternaturall Heate, which is done aſwell by inward as outward Medicines.

Amongſt internall medicines, gentle Emollient Clyſters, and purging Lenitives, are principall: for the body being purged by degrees, & the obſtructions of the inward Bowells taken away, the refrigeration and reſtauration of the inward Bowells muſt needes follow. But amongſt the Purgatives, ſuch things as are too ſharpe and violent, are to be carefully avoyded, leſt by them other excrementitious humours ſhould be drawne downe to the Kidneyes and Bladder, from the Upper parts of the Body: in this caſe, *Manna*, *Syr. roſat. ſolut. comp.* *Syrup de Cichor. cum Rhab.* or the Magiſtrall *Syrup* deſcribed cap. 9. are ſufficient. Of Purgatives.

Of Cassia

Some much commend Cassia to those which have the Stone, and some have used it to good purpose: yet I would have the Industrious physitian know, that others have used it with ill successe, and thereby increased the Maladie. The valiant and noble *Zacharias Geizcoster* of *Geilenbach* complaines in an Epistle dated *May* 18. 1609. Saying that after the use thereof he was troubled with a scalding Urine.

Peter Pigray the famous Chirurgian to his Majestie of France, confirmeth the same, l. 7. cap. 4. where he writeth that Cassia is naught for such as have the Stone. *Anno* 1623. a young Gentleman at Basil, aged 22 yeares, of the familie of the *Burckharts*, being come to visit me, because of the singular love betwixt his Father and my selfe, told me, that in summer in the Dog-dayes, being in Italie, he was taken with *Febris Continua*, and the physitian giving him Cassia, and that in no common Dose, as from ℥j. to ℥j ß. not working by degrees, he increased the dose to ℥ij ß. whence such a flux of Urine followed, that as-oft as he made water for three dayes together, he felt it so sharpe, that it seemed like a red hot iron wire drawne through his yard. By this it appeares, what is to be thought of the use of Cassia for such as have the Stone. Let the foresaide medecines therefore suffice, amongst which the Magistrall Syrrup described cap. 9. ministred with

Succory

Succory, and Sorrell waters, is ſingularly helpfull.

There is good hope of helpe; for ſuch as have the ſtone, by the uſe of Clyſters: becauſe they carry away the phlegme and filth from the lower belly, drawe the nóxious hum ours to the guts, which would otherwiſe flowe to the Kidneyes, and Urinarie paſſages, mollifie and lubricitate the Ureters, aſſwage paine, and coole the Inward Bowells: let the Patient therefore uſe this Clyſter often.

A Clyſter

℞. *Rad. Althea*, ℥ ß.
fol. Althea.
Malv. ana. m ß.
Parietar, m. j.
flor. Camomill.
Melilot.
Sambuc. ana m. ß.
ſem. Lini,
Fœnugrac.
Sem. Aniſ.
Fœnic. ana. ℨ ij.
Coquantur in ſ. q. aquæ, f. decoctio ad conſumptionem tertiæ partis: in ℔ j. *Colatura diſſolve*

Electuar. Diacathol.
Mellis Mercurial. ana. ℥ ß.
Ol. Lilior. alb.
Anethin. ana. ℥ j.
Vitell. ovor. num. ij.
Salis ℈ ij. *Miſce, f. Enema.*

If he ſtill complaine of paine, and heate of the

Urine, and a Clyſter be to be injected preſently; then take of new milke ℔ j. powdered Sugar *cochl.* ij. yolkes of eggs. *n.* ij. ſweet butter, and Oyle of ſweet Almonds *ana.* ℥j. *Miſce* f. *Enema.* Renew it as oft as neede requireth. If you would not have him to retaine it long, add thereunto Salt ℈j. The frequent uſe of this Clyſter cannot be offenſive unto him. But in purging, a moderation is to bee uſed, and the Patient not to be troubled unſeaſonably, for the reaſons before mentioned.

Furthermore, they which have the ſtone, muſt alſo ſometimes take ſomething to coole the inward Bowels, eſpecially the Liver, Kidneyes, and Urinary paſſages: to which end, this following Julep is very proper.

A Iulep.

℞. *Aqua Cichor.*
Endiviæ, ana ℥ ij.
Syr. de ſucc. Citri,
Acetoſ. ana ℥j.
Miſce pro duabus doſibus. or;
℞. *Aqua Cichor.*
Parietar.
Acetoſ. ana ℥ iſ.
Syr de Althea Fernel. ℥j.
Miſce pro duabus doſibus.

If theſe deſtilled waters pleaſe not his palate, this following potion may be made for him.

℞. *Rad Petroſelin.*
Acetoſ.

Liquirit. ana ℥ij.
Herb. Parietar.
Herniar.
Veronic. ana m.ß.
flor. 3. *Cordial. ana* P.j.
Coquantur in ℔ iiij. *aquæ, ad dimidiæ partis conſumptionem. In* ℥ iiij *Colaturæ clarificat. diſſolve*
Syr. de Nymphæa,
Succ. Berberor. ana ℥j.
Miſce pro duabus doſibus.

Let the Patient take theſe potions faſting in the morning, and two howers before Supper, that is about three of clock in the afternoone. Some would have them to be taken after Supper; but ſo they would hinder Concoction: yet if paine enforce it, of two evils the leaſt is to be choſen, as ſhall be ſhewed hereafter.

They which ſometimes can uſe ſowre ſawces, cannot but finde much good thereby; for theſe coole the Liver, and Kidneys, cleanſe the Ureters, and Bladder of all ſlyme, & hinder the generation of the ſtone, as the learned *Tabernæmontanus* witneſſes in his *Theſaurus Aquarius* in ſundry places. But for the uſe of theſe ſowre ſawces, the Patient ought to know the Conſtitution of his owne body, or adviſe with ſome learned Phiſitian thereupon: for if the breaſt or Lungs, be never ſo little periſhed, they

Of ſowre ſauces.

are not to be uſed, for the maladie increaſeth, and waxeth worſe thereby.

To coole the Liver outwardly, the ſick Perſon may once, or twice a day, annoint his right ſide, and Loines, with this Liniment.

Outward remedies

A Liniment

℞. *Vnguenti roſat Meſ.* ℥ij.
Ol. roſac.
Nymphæa, ana ℥ß.
Caphuræ diſſolut. in acet. roſac. ℈j.

Miſceantur in mortario, fiatque Linimentum.

Or hee may apply the *Emplaſtrum Santalin* to the Liver, and renew it once each other day.

I paſſe over other Topicks, and Epithemes, made of diſtilled waters, vineger, and other coolers, becauſe they are not without danger; for as they repel the prætternaturall heate, they ſome-time ſuffocate the naturall: and therefore the Patient muſt deſire the counſell of a learned Phyſitian, that all thinges may be applyed rightly.

Of opening a veine

To ſuppreſſe the inward diſtemper of the Liver, phlebotomy is very helpefull, which nevertheleſſe can not be made without adviſe of the phyſitian, who is to reſpect the ſtrength and conſtitution of the Patient; for if he be weake and feeble, as many Calculous people are, a veine is not

to

to be opened; or if through old age. or the greivousneſſe of the ſickneſſe, the body be not plethoricke, Cacochymous, and full of evill humours. Bleeding is not convenient; but it will be better to purge, and clenſe the Body with Benedictes; as hath bin ſhewed, cap. 9. The veine is to be opened in the right Arme, unleſſe the Patient feele ſome notable paine on his left ſide, and then it is to be done in the left Arme.

If the ſtone fall downeward to the neck of the Bladder, and ſtop the Urine, as it often doth, and cauſe great paine, then all meanes muſt be uſed to repell the ſtone from the necke of the Bladder, and aſſwage the paine: and becauſe it oft happeth, that winde and the dryed excrementes of the Guts preſſe both the bladder and ſtone downeward toward the neck, one of the Clyſters deſcribed formerly in this chapter, is to be injected.

The firſt Clyſter is to be a little quickned, that it may preſently bring forth the wind, and retained excrements; but the reſt may be kept longer.

Some in this caſe put the Patient into a Bath, made of emollient Hearbes, which doth in ſome manner mitigate paine, make the Urinarie paſſages ſoft, and ſlipperie, and procure Urine; but if the Patient ſit upright in the Bath, the ſtone falleth downe

downe to the neck of the Bladder, and ſtoppeth the Urine: It is better therefore that the Patient ſhould be laide upon his backe, that his belly may be higher than his head, and ſo the ſtone may returne upward.

In liew of the Bath, you ſhall applie unto him a bagge filled with the following Herbes bigg enough to cover the lower Belly, to the navill, the *Inguina*, and Perinæum, and renew it as neede requireth.

A Sacculus.

℞. *Rad. Lilior. Alb.*
Althea, ana. ℥ ß
fol. Malvæ,
Althea,
Brancæ urſin. ana. m. j.
Parietar. m. j ß.
flor. Melilot.
Sambuc.
Chamomill. ana. m. j.
ſem. Lini,
Fœnugræc.
Aniſ. ana. ℥ j.

Incidantur et contundantur omnia groſſo modo pro Sacculo.

The Bagge is to be boyled, in milke or water, and to be applied hot; and that being removed, the Belly, and Pudenda are to be annointed with this Liniment.

A Liniment.

℞. *Butyr. recent* ℥ j ß.

Ol

Ol. Amygd. dulc.
Scorpion. ana. ℥j. Miſce.

The following *Anodynous* potion, may be alſo adminiſtred unto him.

Apotion after ſupper.

℞. *Aq. Lactuc. Paritar ana ℥ jß.*
Syr. de Papaver. ℥j.
Confect. Alkermes ʒj.
Miſce. f. Potio.

Let it be given him two howres after Supper; or let him drinke this Emulſion.

An Emulſion.

℞. *Amygd. dulc. decorticat. ℥ij.*
ſem. Papaver. alb. ʒ iiij.
frig. quatuor Major. ava. ʒj.

Cum ℔ ij. *decocti ſequentis f. Emulſio; addendo*

Syr. de Althea Fernel.
Nymphæa, ana. ℥iß.

The decoction for the Emulſion is this.

℞. *Hordei decorticat.*
Vvarum paſſular. exacinat.
Liquirit. mundat. & inciſ. ana ℥j.
fol. Veronie.
Parietar.
Herniar. ana. m. ß.

Cum ℔ iiij. *aquæ fontan. f. decoctio ad ad tertiæ partis conſumptionem.*

But if the ſtone cannot be driven backe from the necke of the Bladder by theſe meanes

meanes, nor the paine aſſwaged, Let the Chirurgian, or ſome other verſed in this buſineſſe, drive it backe with his Fore-finger, annointed with oyle, or ſweete Butter, and put it into the Fundament.

If the ſtone can neither be put backe with the finger, nor the Urine procured, let the Chirurgian put it back gently with one of his Inſtruments, or Catheters, annointed with oyle of ſweete Almonds, and thruſt through the yard into the Bladder, that the Urine may find an iſſue through the Cannula, and all the ſicke perſons paine may be abated.

I have knowne ſome Calculous people, which by this Palliative Cure have lived many yeares, to the great good of their freinds, and Country.

Anno 1625, a noble man in France comming from Italie, lodged here at the ſigne of the Crowne, who for a whole day, and the night following could not make one drop of water: I being called in the morning, and by my Inſtrument having given it a paſſage, He himſelfe put a waxe Candle into his yard, mounted on Horſebacke, and ſet forward one his journey, ſhewing that the waxe candle did not trouble him, though he was riding: But this experiment is not dangerleſſe, becauſe by this meanes, the Urinary paſſage may be hurt, and exulcerated.

Peter

Peter Pigray l. 7. chap. 4. teſtifieth, that himſelfe knew a Noble man, who was troubled with the ſtone 25 yeares together, and as oft as he was to make water, applyed the Catheter with his owne hands, to open the paſſage.

Theodoricus lib. 3. *cap.* 44. writeth, that the ſtone may be ſo thruſt to the Bottome of the Bladder, that it may ſticke there 40 yeares together; which I durſt not have inſerted here, had not *Guido de Cauliaco Tractat.* 6. *doct.* 2. *cap.* 7. confirmed it.

But it being granted that *Theodoricus* wrote ſomewhat largely, yet it is certaine, and I have obſerved it in many, that by meanes of the ſaide Cure they have lived many yeares. Since then as Chriſt our Head and Saviour hath taught us, by many miſeries and afflictions wee muſt goe to æternall reſt; let no ſicke man, if the ſtone cannot be cut out, without danger of death, by reaſon of its biggneſſe, out of impatience breake of the thread of his life; but with a Chriſtian patience and conſtancy waite for his delivery by the great phyſitian of phyſitians.

Theſe thinges at the requeſt of ſome freinds I would not conceale from the Ingenuous reader.

God of his mercy grant that grace to all Chirurgians, that they may order them The Concluſion.

them, to the Glory of his name, the profit of their Patients, and their owne ſalvation. And that thou mayſt enjoy thy deſire, and God almightie may bleſſe thy Handy-worke, thou ſhalt crave his aſſiſtance in all thy actions; live an honeſt, ſober godly, modeſt, and chaſt life; more regard the health and ſafety of thy Patients, than thine owne Good; and ſo will God preſerve thee in this life, and afterwards of his mercy give thee Eternall Happineſſe.

Soli Deo ſit Gloria.

FINIS.

MVSEVM BRITANNICVM

In Turkey they cutt children
upon a Stripe, & to y wound
they apply a pidgeon cutt
through while alive & shew
upon it some velvety powder
by this Means Mr. Lockwood
a Turkey Merchant Cure
y wound cured & y Kay abroad
in 10 Days